(FILE 'HCAPLUS' ENTERED AT 09:29:22 ON 04 DEC 2003) 673 SEA FILE=HCAPLUS ABB=ON PLU=ON COCCIDIOID? 242 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND (PROTEIN OR L29 L30 POLYPEPTIDE OR PROTEIN OR PEPTIDE) L31 44 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 AND VECTOR L32 14 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND RECOMBIN? L32 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN ACCESSION NUMBER: 2003:846781 HCAPLUS TITLE: Cholera vaccine candidate 638: intranasal immunogenicity and expression of a foreign antigen from the pulmonary pathogen Coccidioides immitis AUTHOR(S): Silva, Anisia J.; Mohan, Archana; Benitez, Jorge CORPORATE SOURCE: Biochemistry and Immunology, Department of Microbiology, Morehouse School of Medicine, 720 Westview Dr., SW, Atlanta, GA, 30310-1495, USA Vaccine (2003), 21(32), 4715-4721 SOURCE: CODEN: VACCDE; ISSN: 0264-410X PUBLISHER: Elsevier Science Ltd. DOCUMENT TYPE: Journal LANGUAGE: English Vibrio cholerae strain 638 is a live genetically attenuated candidate cholera vaccine in which the CTXΦ prophage encoding cholera toxin has been deleted and hapA, encoding an extracellular Zn-dependent metalloprotease, was insertionally inactivated. Strain 638 was highly immunogenic when inoculated to adult Swiss mice by the intranasal route as judged by the induction of a strong serum vibriocidal antibody response. A side-by-side comparison of strain 638 with its isogenic hapA+ precursor (strain 81) in the above model indicated that inactivation of hapA does not affect immunogenicity. The spherule-associated antigen 2/proline-rich antigen (Ag2/PRA) of Coccidioides immitis has been shown to protect mice against coccidioidomycosis to an extent dependent on the modes of antigen presentation and challenge with C. immitis arthrospores. this work, we demonstrate the use of a live genetically attenuated V. cholerae strain to deliver Ag2/PRA. Ag2/PRA was expressed in 638 as a fusion protein with the Escherichia coli heat labile toxin B subunit leader peptide using the strong Tac promoter. The recombinant Ag2/PRA was efficiently expressed, processed and secreted to the periplasmic space. Intranasal immunizations of adult mice with strain 638 expressing Ag2/PRA induced serum vibriocidal antibody response to the vector strain and serum total IgG response to Ag2/PRA. Strain 638 expressing PRA could be recovered from trachea and lung up to 20 h after immunization but was effectively cleared 72 h post-inoculation. L32 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN 2003:454501 HCAPLUS ACCESSION NUMBER: DOCUMENT NUMBER: 139:35072 TITLE: Vectors comprising nucleotide

sequences for target immunogen, PI31, CIIIA and antisense HERNA mRNA, and their uses including

use as vaccines

INVENTOR(S):

McCreavy, David Thomas; Fraser, William Duncan;

Gallagher, James Anthony

PATENT ASSIGNEE(S): University of Liverpool, UK

SOURCE: PCT Int. Appl., 52 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATI	ENT I	NO.		KI	ND	DATE				PPLI				DATE		
		0483 0483	-		_	2003 2003				20				2002		
		AE, CN, GE, LC, NO, TM,	AG, CO, GH, LK, NZ, TN,	AL, CR, GM, LR, OM, TR,	AM, CU, HR, LS, PH, TT,	AT, CZ, HU, LT, PL, TZ,	AU, DE, ID, LU, PT, UA,	DK, IL, LV, RO, UG,	DM, IN, MA, RU, US,	DZ, IS, MD, SC,	EC, JP, MG, SD,	EE, KE, MK, SE,	ES, KG, MN, SG,	BZ, FI, KP, MW, SK, ZM,	GB, KR, MX, SL,	GD, KZ, MZ, TJ,
IORITY		GH, BG, MC, GQ,	GM, CH, NL, GW,	KE, CY, PT, ML,	LS, CZ, SE,	DE,	MZ, DK, SK,	SD, EE, TR, TD,	SL, ES, BF, TG	FI, BJ,	FR, CF,	GB, CG,	GR, CI,	ZW, IE, CM,	IT, GA,	LU,
										002-2				2002		

PRI AB The invention provides vectors (such as viral

vectors, plasmid vectors or phagemids) comprising: (a) a heterologous nucleotide sequence encoding an antigenic polypeptide from a pathogen (such as viral, bacterial, parasitic or fungal); (b) a nucleotide sequence encoding a protease inhibitor (such as human PI31); a nucleotide sequence for a constitutive, regulatable, and/or cell/tissue-specific promoter; and (d) a nucleotide sequence encoding an inhibitory RNA mols., specifically an antisense human HERNA oligonucleotides. The invention also provides vectors comprising a nucleotide sequence encoding CIITA, a polypeptide that stimulates the expression of MHC class II genes. The invention further provides the use of said vectors as vaccines in production of an immune response (humoral) to said antigens in an animal, such as human, wherein said vaccination may be against a viral, fungal, bacterial or parasitic disorder. Still further, the invention relates: (a) using said vectors in production of antibodies, wherein said antibodies may be of therapeutic and/or of diagnostic use; (b) that said vectors may be adapted for expression of humanized or chimeric antibodies; and (c) that said vectors may be used to used to immunize animals for production of hybridomas expressing a monoclonal antibody against antigen of interest. Finally, the invention provides the cDNA sequences of mouse CIITA, and human PI31, and partial cDNA sequence of human HERNA helicase. The invention related that the use of said vectors containing said sequences can be used to enhance secretion of translated immunogen, and enhance DNA vaccination bias away from an MHC class I event towards MHC class II event. In the examples, the invention presented the construction of two vectors, pcDNAFinal and pcDNA6TR-IRES-CIITA, wherein pcDNAFinal contains nucleotide sequences encoding immunogen parathyroid hormone-related protein (PTHrP), antisense HERNA mRNA, PI31 and CD4+ T-cell epitope from lymphocytic choriomeningitis virus and wherein

pcDNA6TR-IRES-CIITA encodes CIITA. Specifically, the invention related that: (a) antisense HERNA RNA can increase the transcriptional efficiency of **vectors** resulting in greater levels of transgene expression; (b) PI31 can inhibit proteasome digestion of **recombinant** antigen making it more assessable to MHC class II antigens; (c) inclusion of CD4+ T-cell epitope ensured that degraded immunogen-MHC class II complex bound to CD4+ T cells; and (d) inclusion of CIITA **protein** allowed for over-expression of MHC class II antigens.

L32 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:637813 HCAPLUS

DOCUMENT NUMBER: 137:180844

TITLE: Yeast Bax-responsive genes for drug target

identification in yeast and fungi

INVENTOR(S): Contreras, Roland Henri; Eberhardt, Ines;

Luyten, Walter Herman Maria Louis; Reekmans,

Rieka Josephina

PATENT ASSIGNEE(S): Janssen Pharmaceutica N.V., Belg.

SOURCE: PCT Int. Appl., 344 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

```
PATENT NO.
                 KIND DATE
                                        APPLICATION NO. DATE
                                          _____
    WO 2002064766 A2 20020822
WO 2002064766 A3 20030626
                           20020822
                                        WO 2001-EP15398 20011221
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
            CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
            GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
            LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
            NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
            TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG,
            KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
            CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,
            SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
            SN, TD, TG
    EP 1346044
                     A2
                           20030924
                                          EP 2001-997983 20011221
           AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
            PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.:
                                       EP 2000-870318
                                                       A 20001222
                                       EP 2001-870002
                                                      A 20010104
                                       EP 2001-870003
                                                      A 20010109
                                       WO 2001-EP15398 W 20011221
```

AB The cDNAs for Saccharomyces cerevisiae genes responding to BAX gene expression as well as the **proteins** encoded by these cDNAs are disclosed. Addnl., Candida albicans and human homologs of the S. cerevisiae genes/**proteins** are provided. The invention describes the use of nucleic acids and **proteins** which are involved in apoptosis in yeast or fungi for the preparation of medicines for treating diseases associated with yeast or fungi or for the treatment of proliferative disorders or for preventing apoptosis in certain diseases. Methods are provided to identify compds. which selectively modulate the expression or functionality of said

proteins in the same or a parallel pathway. Also provided are compds. as well as pharmaceutical compns., medicines and vaccines. The invention also comprises new nucleic acid sequences, probes and primers derived thereof, expression vectors and host cells transformed with said vectors, polypeptides and antibodies raised against said polypeptides.

L32 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:

2002:489694 HCAPLUS

DOCUMENT NUMBER:

137:92359

TITLE:

Role of signal sequence in vaccine-induced

protection against experimental

coccidioidomycosis

AUTHOR(S):

Jiang, Chengyong; Magee, D. Mitchell; Ivey, F.

Douglas; Cox, Rebecca A.

CORPORATE SOURCE:

Department of Microbiology, University of Texas

Health Science Center at San Antonio, San

Antonio, TX, 78229, USA

SOURCE:

Infection and Immunity (2002), 70(7), 3539-3545

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER:

American Society for Microbiology

DOCUMENT TYPE:

Journal English

LANGUAGE:

The vaccine efficacy of the gene sequence encoding the signal peptide of the antigen known as antigen 2 or proline-rich antigen (Ag2/PRA), an immunodominant antigen present in the cell wall of the fungal pathogen Coccidioides immitis, was investigated in a murine model of coccidioidomycosis. Expression plasmids for Ag2/PRA(1-18) DNA (signal sequence), Ag2/PRA(19-194) DNA (lacking the signal sequence), and Aq2/PRA(1-194) DNA (full length) were inserted in the pVR1012 vector, and the constructs were used to vaccinate the highly susceptible BALB/c mouse strain. Immunization with the signal gene sequence significantly reduced the fungal burden in the lungs and spleens of mice 12 days after i.p. challenge with a LD of 2500 C. immitis arthroconidia, to a level comparable to the protection induced in mice immunized with the full-length Ag2/PRA(1-194) DNA. The Aq2/PRA(19-194) gene protected mice but to a significantly lower level than the signal sequence or the full-length Ag2 gene. The immunizing capacity of Ag2/PRA(1-18) was not attributable to a nonspecific immunostimulatory effect of DNA, as evidenced by the fact that mice immunized with a frameshift mutation of Ag2/PRA(1-18) were not protected against challenge. Furthermore, a synthetic peptide corresponding to the translated sequence of Aq2/PRA(1-18) DNA protected mice, albeit at a lower level than the Ag2/PRA(1-18) DNA vaccine. The protection induced with the signal gene vaccine correlated with the production of gamma interferon when splenocytes from Ag2/PRA(1-18)-immunized mice were stimulated with recombinant full-length Ag2 and was not associated with the production of anti-Coccidioides IgG antibody. This is the first study to establish that a signal peptide sequence alone, administered as a gene vaccine or synthetic peptide

THERE ARE 36 CITED REFERENCES AVAILABLE REFERENCE COUNT: 36 FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

, can induce protective immunity against a microbial pathogen.

L32 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN 2002:366877 HCAPLUS ACCESSION NUMBER: DOCUMENT NUMBER: 137:137416 TITLE: Complementation of the ODC-Escherichia coli (EWH319) null mutant by expression of the Coccidioides immitis ornithine decarboxylase (CiODC) gene AUTHOR(S): Guevara-Olvera, L.; Guevara-Gonzalez, R. G.; Munoz-Sanchez, C. I.; Gonzalez-Chavira, M. M. CORPORATE SOURCE: Inst. Tecnologico de Celaya, Depto. Ingenieria Bioquimica, Guanajuato, 38010, Mex. SOURCE: Informacion Tecnologica (2002), 13(2), 177-181 CODEN: ITECFG; ISSN: 0716-8756 PUBLISHER: Centro de Informacion Tecnologica DOCUMENT TYPE: Journal LANGUAGE: Spanish The aim of this study was to determine the function of the ornithine decarboxylase (CiODC) gene from Coccidioides immitis, a human respiratory fungal pathogen. A fragment of complementary DNA (cDNA) coding for CiODC protein was cloned into the pET-28b vector. The pET-CiODC recombinant plasmid was used to transform the EWH319 strain of Escherichia coli, which lacks the ODC gene and all others which synthesize polyamines and shows reduced growth due to this deficiency. Introduction of the transformant plasmid restored the bacterial growth in minimal M9 medium. The complemented strain EWH319.pET-CiODC showed ODC activity which was inhibited by 1,4-diamino-2-butanone (DAB) a competitive inhibitor which is specific for eukaryote ODCs. Based on the present results it was concluded that expression of the CiODC gene from Coccidioides immitis conferred a fundamental function for the growth of Escherichia coli. THERE ARE 20 CITED REFERENCES AVAILABLE REFERENCE COUNT: 20 FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT L32 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN 2002:107512 HCAPLUS ACCESSION NUMBER: DOCUMENT NUMBER: 136:162279 Production of human monoclonal antibodies in TITLE: human B-lymphocyte hybridomas expressing an ectopic telomerase gene Dessain, Scott K.; Goldsby, Richard A. INVENTOR(S): PATENT ASSIGNEE(S): Whitehead Institute for Biomedical Research, USA SOURCE: PCT Int. Appl., 74 pp. CODEN: PIXXD2 DOCUMENT TYPE: Patent

PATI	ENT	NO.		KI	ND	DATE			A	PPLI	CATI	N NC	٥.	DATE		
						2002			W	0 20	01-U	S245	91	2001	0801	
	W:	CN, GE,	CO, GH,	CR, GM,	CU, HR,	AT, CZ, HU, LT,	DE, ID,	DK, IL,	DM, IN,	DZ, IS,	EC, JP,	EE, KE,	ES, KG,	FI, KP,	GB, KR,	GD, KZ,

English

LANGUAGE:

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

```
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
             TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
            MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,
            CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
             TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
             TD, TG
     US 2002045219
                            20020418
                                           US 2001-759984
                      A1
                                                            20010112
                                        US 2000-222473P P 20000802
PRIORITY APPLN. INFO.:
                                        US 2001-759984
                                                       A1 20010112
     The present invention relates to a method of making human monoclonal
```

antibodies through the use of novel hybrid cells. In the invention, hybrid cells are created by combining three elements: a fusion partner cell, a fusion cell (in particular a human B-lymphocyte), and an ectopic telomerase gene. Mammalian cell lines that ectopically express telomerase and methods of using such cell lines in producing novel hybrid cells (hybridomas) that produce human monoclonal antibodies; human monoclonal antibodies produced by such novel hybridomas and DNA constructs useful for producing mammalian cell lines that ectopically express telomerase are described. The expression of an ectopic telomerase gene in hybrid cells formed from primary human B-lymphocytes and fusion partner cells (other human non-B lineage cells) improves their growth rate, level of Ig expression, stability of Ig expression, and the ability to be cloned by limiting dilution A murine myeloma cell line that ectopically expressed human telomerase was created, as well as murine/human cell hybrids.

L32 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:935789 HCAPLUS

DOCUMENT NUMBER: 136:65197

TITLE: Sequences of antigenic polypeptides of

staphylococcus aureus and their uses in against

bacterial infection

INVENTOR(S): Foster, Simon; McDowell, Philip; Brummell,

Kirsty; Clarke, Simon

PATENT ASSIGNEE(S): University of Sheffield, UK; Biosynexus Inc.

SOURCE: PCT Int. Appl., 85 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

```
PATENT NO.
                KIND DATE
                                     APPLICATION NO.
                      -----
                                    _____
-----------
                A1
                      20011227
                                   WO 2001-GB2685 20010620
WO 2001098499
       AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
       CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
       GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
        LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
        NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
        TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
       MD, RU, TJ, TM
    RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,
        CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
        TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD,
        TG
```

```
EP 1292681
                      A1
                            20030319
                                           EP 2001-940746
                                                           20010620
            AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
             PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     BR 2001011823
                            20030610
                                           BR 2001-11823
                                                            20010620
                     Α
     NO 2002005838
                      Α
                            20030218
                                           NO 2002-5838
                                                            20021205
     US 2003186275
                            20031002
                                           US 2003-311879 20030318
                      A1
PRIORITY APPLN. INFO.:
                                        GB 2000-14907 A 20000620
                                        WO 2001-GB2685
                                                       W 20010620
     The invention discloses methods for the identification of antigenic
    proteins expressed by pathogenic microbes, vaccines
     comprising the proteins, recombinant methods to
     manufacture the proteins and therapeutic antibodies directed to
     the proteins. In particular, the invention discloses
     amino acid sequences of staphylococcus aureus antigenic
    proteins, the DNA sequences encoding polypeptides
     and genomic DNA library of staphylococcus aureus.
                                                        The invention
     also provides expression vectors encoding antigenic
    peptides, methods for the production of the proteins,
     antibodies to the proteins as well as methods of preparing
     the antibodies. The invention further provides vaccine comprising
     the antigenic proteins, pharmaceutical carrier, and
     adjuvant as well as methods of immunizing animals or humans.
REFERENCE COUNT:
                         2
                               THERE ARE 2 CITED REFERENCES AVAILABLE FOR
                               THIS RECORD. ALL CITATIONS AVAILABLE IN
                               THE RE FORMAT
L32 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN
                        2001:309883 HCAPLUS
ACCESSION NUMBER:
DOCUMENT NUMBER:
                         135:91197
                        Recombinant urease and urease DNA of
TITLE:
                         Coccidioides immitis elicit an
                         immunoprotective response against
                         coccidioidomycosis in mice
                         Li, Kun; Yu, Jieh-Juen; Hung, Chiung-Yu;
AUTHOR(S):
                         Lehmann, Paul F.; Cole, Garry T.
CORPORATE SOURCE:
                         Department of Microbiology and Immunology,
                         Medical College of Ohio, Toledo, OH, 43614-5806,
                         USA
                         Infection and Immunity (2001), 69(5), 2878-2887
SOURCE:
                        CODEN: INFIBR; ISSN: 0019-9567
                        American Society for Microbiology
PUBLISHER:
DOCUMENT TYPE:
                        Journal
LANGUAGE:
                         English
    Coccidioides immitis antigens which stimulate a T helper
     cell 1 (Th1) pathway of host immune response are considered to be
     essential components of a vaccine against coccidioidomycosis
       Recombinant urease (rURE) and recombinant
     heat shock protein 60 (rHSP60) of C. immitis were
     expressed in Escherichia coli and tested as vaccine candidates in
     BALB/c mice. A synthetic oligodeoxynucleotide which contained
     unmethylated CpG dinucleotides and was previously shown to enhance a
     murine Th1 response was used as an immunoadjuvant. T cells isolated
     from the spleens and lymph nodes of the rURE- and rHSP60-immune mice
     showed in vitro proliferative responses to the resp.
     recombinant protein, but only those T lymphocytes
     from rURE-immunized mice revealed markedly elevated levels of
     expression of selected Th1-type cytokine genes. BALB/c mice
     immunized s.c. with rURE and subsequently challenged by the i.p.
```

route with a lethal inoculum of C. immitis arthroconidia demonstrated a significant reduction in the level of C. immitis infection compared to control animals. RHSP60 was much less effective as a protective antigen. Evaluation of cytokine gene expression in lung tissue and levels of recombinant urease-specific Igs (IgG1 vs. IgG2a) in murine sera at 12 days after challenge provided addnl. evidence that immunization with rURE stimulated a Th1 response to the pathogen. Urease was further evaluated by expression of the URE gene in a mammalian plasmid vector (pSecTag2A.URE) which was used to immunize mice by the intradermal route. In this case, 82% of the vector construct-immunized animals survived more than 40 days after i.p. infection, compared to only 10% of the mice immunized with the vector alone. In addition, 87% of the pSecTag2A.URE-immunized survivors had sterile lungs and spleens. These data support the need for further evaluation of the C. immitis urease as a candidate vaccine against coccidioidomycosis.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L32 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1999:83280 HCAPLUS

DOCUMENT NUMBER: 130:266091

TITLE: Genetic vaccination against Coccidioides

immitis: comparison of vaccine efficacy of recombinant antigen 2 and antigen 2 cDNA

AUTHOR(S): Jiang, Chengyong; Magee, D. Mitchell; Quitugua,

Teresa N.; Cox, Rebecca A.

CORPORATE SOURCE: Department of Clinical Investigation, Texas

Center for Infectious Disease, San Antonio, TX,

78223, USA

SOURCE: Infection and Immunity (1999), 67(2), 630-635

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

Previous studies from our laboratory established that C-ASWS, an alkali-soluble, water-soluble extract from cell walls of Coccidioides immitis, protects mice against lethal challenge with this fungus. The C-ASWS extract contains a glycosylated protein, designated antigen 2 (Ag2), and a polysaccharide antigen. We recently cloned Aq2 cDNA and showed that the recombinant fusion protein elicited strong delayed-type hypersensitivity responses in immunized mice. This investigation was undertaken to determine if the recombinant Ag2 protein, expressed as an Ag2-glutathione S-transferase (GST) fusion protein, or Ag2 cDNA would protect mice against lethal challenge with C. immitis. The recombinant Ag2-GST protein protected BALB/c mice against i.p. challenge with 250 arthroconidia, as assessed by a decrease in fungal CFU in tissues. The Ag2-GST-immunized mice did not show, however, an increased survival during a 30-day period postinfection. By contrast, immunization of mice with Ag2 cDNA ligated into the pVR1012 plasmid engendered protection against i.p. challenge with 2,500 arthroconidia and against pulmonary challenge with 50 arthroconidia. Vaccine efficacy paralleled the development of delayed-type hypersensitivity responses to C. immitis antigen.

Whereas mice vaccinated with the **recombinant** Ag2-GST **protein** did not mount footpad hypersensitivity to C-ASWS or the **recombinant** Ag2-GST **protein**, mice vaccinated with the pVR1012-Ag2 construct mounted a strong footpad hypersensitivity and their spleen cells secreted gamma interferon upon in vitro stimulation with the Ag2-containing C-ASWS extract This is the first investigation to show that genetic immunization can protect against lethal challenge with C. immitis.

REFERENCE COUNT:

THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

50

ACCESSION NUMBER:

1999:18776 HCAPLUS

DOCUMENT NUMBER:

130:236203

L32 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

TITLE:

Detecting serum antibodies to a purified recombinant proline-rich antigen of Coccidioides immitis in patients with

coccidioidomycosis

AUTHOR(S):

PUBLISHER:

Orsborn, Kris I.; Galgiani, John N.

CORPORATE SOURCE:

Research and Medical Services, Veterans Affairs Medical Center, University of Arizona, Tucson,

AZ, USA

SOURCE:

Clinical Infectious Diseases (1998), 27(6),

1475-1478

CODEN: CIDIEL; ISSN: 1058-4838 University of Chicago Press

DOCUMENT TYPE: LANGUAGE: Journal English

In previous work, antibodies in serum samples from patients with coccidioidomycosis were found to react with a proline-rich antigen (PRA) isolated from spherules of Coccidioides immitis, and the gene encoding this antigen was cloned. expressed and purified recombinant PRA (rPRA) by removing the majority of amino acids contributed by the vector from the fusion protein. Purified rPRA reacted with serum IgG antibodies in 37 of 42 patients with culture-proven progressive pulmonary or extrapulmonary coccidioidal disease; specific antibodies in dilns. ranging from 1:40 to 1:102,400 were demonstrated (sensitivity, 88%). In contrast, for >95% of patients without coccidioidomycosis reactivity of <1:40 was demonstrated (specificity, 97%). Of 18 patients with primary self-limited coccidioidomycosis, none had detectable antibodies in serum samples collected up to 141 days after illness began. The association of antibodies to rPRA with progressive infection may have prognostic value.

REFERENCE COUNT:

22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L32 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER:

1996:391996 HCAPLUS

DOCUMENT NUMBER:

125:55750

TITLE:

Molecular cloning and characterization of

Coccidioides immitis antigen 2 cDNA

AUTHOR(S):

Zhu, Yufan; Yang, Chunmu; Magee, D. Mitchell;

Cox, Rebecca A.

CORPORATE SOURCE:

Dep. Clinical Investigation, Texas Center

Infectious Disease, San Antonio, TX, 78223, USA SOURCE: Infection and Immunity (1996), 64(7), 2695-2699

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

Previous expts. have provided evidence that Coccidioides immitis antigen 2 (Ag2) is a major T-cell-reactive component of mycelia and spherule cell walls. Here the authors report the identification and cloning of the cDNA that encodes Ag2 from a lambda ZAP cDNA expression library constructed from spherule-derived DNA sequence anal. established that the 1,255-bp clone contains a 174-bp 5' untranslated region, a 582-bp open reading frame which encodes for a protein consisting of 194 amino acids, and a 375-bp 3' untranslated region, including a poly(A) The recombinant Ag2 protein has a predicted mol. mass of 19.5 kDa and contains an 18-amino-acid N terminus which has been tentatively identified as a signal peptide. The Ag2 cDNA was ligated into the pGEX-4T-3 vector and expressed in Escherichia coli TG-1 cells as a glutathione S-transferase fusion protein. The recombinant fusion protein showed reactivity with sera from patients with coccidioidomycosis and elicited delayed-type footpad hypersensitivity responses in Coccidioides-immune mice. These results suggest that the Ag2 cDNA can be used for the large-scale production of this immunol. important protein.

L32 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1996:327965 HCAPLUS

DOCUMENT NUMBER: 125:28509

TITLE: Molecular cloning and characterization of the

Coccidioides immitis complement

fixation/chitinase antigen

AUTHOR(S): Yang, Chunmu; Zhu, Yufan; Magee, D. Mitchell;

Cox, Rebecca A.

Department Clinical Investigation, Texas Center Infectious disease, San Antonio, TX, 78223, USA

SOURCE: Infection and Immunity (1996), 64(6), 1992-1997

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

CORPORATE SOURCE:

Detection of anti-Coccidioides complement-fixing (CF) antibody is a valuable diagnostic and prognostic aid in coccidioidomycosis. The CF antibody response is directed against a heat-labile antigen that has chitinase activity, hereafter referred to as the CF/chitinase protein. To identify and clone this immunoreactive enzyme, the authors constructed a Coccidioides immitis cDNA lambda ZAP expression library from spherule RNA and detected fusion peptides expressing CF epitopes by immunoscreening. A cDNA clone consisting of 1623 bp was identified, sequenced, and found to contain a single open reading frame that encodes a protein of 47 kDa with 427 amino acids. Deduced amino acid sequence analyses showed that the cloned CF/chitinase cDNA contains a 35-amino-acid region, beginning at Ser-18 and ending at Arg-52, which has 92% homol. with the reported N-terminal amino acid sequence of authentic CF/chitinase

protein. The first 17 amino acids in the deduced sequence of the cloned cDNA are not present on the mature CF/chitinase protein, suggesting that it may be a signal peptide

. Expression of the CF/chitinase cDNA insert by using the pGEX-4T-3 vector yields a fusion peptide that bears

CF-specific epitopes and shows chitinase activity. The CF/chitinase clone will enable large-scale production of the recombinant CF antigen for use in immunoassays and facilitate studies on the role of chitinase in the morphogenesis of C immitis.

L32 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:832234 HCAPLUS

DOCUMENT NUMBER: 124:2086

TITLE: Molecular and biochemical characterization of a

Coccidioides immitis-specific antigen

AUTHOR(S): Pan, Shuchong; Cole, Garry T.

CORPORATE SOURCE: Department of Microbiology, Medical College of

Ohio, Toledo, OH, 43699-008, USA

SOURCE: Infection and Immunity (1995), 63(10), 3994-4002

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

Results of earlier investigations have indicated that the saprobic phase of Coccidioides immitis produces a heat-stable, 19-kDa antigen with serine proteinase activity which has been suggested to be specific for this pathogenic fungus. In the present study the authors have determined the N-terminal and partial internal amino acid sequences of the purified, 19-kDa antigen, cloned the gene which encodes this polypeptide, and confirmed that the secreted proteinase is a Coccidioides-specific antigen (CS-Aq). Both the genomic and cDNA sequences are reported and reveal that the csa gene which encodes this antigen has no introns. A 543-bp open reading frame encodes a 181-amino-acid-containing protein with a predicted mols. mass of 19.8 kDa and an isoelec. point of 8.3. The csa gene was localized on chromosome I of three representative C. immitis clin. isolates on the basis of Southern hybridizations. Expression of the csa gene in Escherichia coli using the pET21a plasmid vector yielded a recombinant protein that was recognized in immunoblot assays by antibody raised to the purified 19-kDa CS-Aq. Secretion of the native antigen is suggested to occur by cleavage of a putative 23-residue signal peptide. The native CS-Ag showed a low degree of glycosylation. Anal. of the carbohydrate composition of the CS-Ag revealed xylose, mannose, galactose, and qlucose. However, the purified antigen showed no affinity for Con A. A PCR method with specificity and high sensitivity for detection of C. immitis genomic DNA, using a pair of synthetic oligonucleotide primers whose sequences were based on that of the csa gene, was developed. A 520-bp product was amplified only when C. immitis genomic DNA was used as the template. The lower limits of DNA detection using this PCR method were 1 pg of C. immitis genomic DNA by ethidium bromide staining and 100 fg after Southern hybridization. The csa gene-based PCR method for detection of C. immitis DNA is useful for culture identification and may have clin. applications for the diagnosis of coccidioidal infections.

L32 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:267638 HCAPLUS

DOCUMENT NUMBER: 120:267638

TITLE: Identification of antigens of

Coccidioides immitis which stimulated

immune T lymphocytes

AUTHOR(S): Cole, Garry T.; Kirkland, Theo N.

CORPORATE SOURCE: Dep. Bot., Univ. Texas, Austin, TX, 78713, USA

SOURCE: Archives of Medical Research (1993), 24(3),

281-91

CODEN: AEDEER; ISSN: 0188-4409

DOCUMENT TYPE: Journal LANGUAGE: English

T-cell mediated immune response to coccidioidomycosis has been shown to be the principal mechanism of resistance to this respiratory fungal disease in exptl. animals. In this study, a Coccidioides immitis antigen-specific murine T-cell line was used to identify macromols. capable of eliciting an immune mouse T-cell proliferative response. The murine T-cell line was selected on the basis of its strong pos. response to a soluble conidial wall fraction (SCWF), which had previously been shown to be reactive in humoral and cellular immunoassays. An antigen-specific T-cell line rather than T-cell clones was used to identify multiple antigens. The T-cell immunoblot method was employed first to identify immunoreactive subfractions of the SCWF, and then to identify T-cell fusion proteins (FPs) obtained from a cDNA expression library constructed in Agtll. The library was screened with anti-SCWF. The nucleotide sequence of a 0.2-kb cDNA insert encoding a FP which elicited vigorous T-cell response was determined A construct of this insert was subcloned into the pET expression vector system and 6.5-kDa recombinant protein (RP) expressed in Escherichia coli was isolated. The RP and FP were shown to be homologous on the basis of identify of their amino acid sequences. Antibody raised in guinea pigs against the RP recognized a 59-kDa native protein of the mycelial culture filtrate produced by 3 sep. strains of C. immitis, and reacted with the cell wall of arthroconidia as detected by immunofluorescence microscopy. In this study, a potentially important T-cell stimulating antigen of C. immitis was identified and partly characterized.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 09:34:38 ON 04 DEC 2003)

L33 37 S L32

L34 18 DUP REM L33 (19 DUPLICATES REMOVED)

L34 ANSWER 1 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: .2003-829776 [77] WPIDS

CROSS REFERENCE: 1999-551417 [46]; 2002-606631 [65]

DOC. NO. NON-CPI: N2003-662909 DOC. NO. CPI: C2003-233753

TITLE: Novel chitin-binding, chitinase-inactive polypeptide comprising a chitin-binding

fragment, useful for treating fungal infections.

DERWENT CLASS: B04 D16 S03

INVENTOR(S): GRAY, P W; TJOELKER, L W

PATENT ASSIGNEE(S): (GRAY-I) GRAY P W; (TJOE-I) TJOELKER L W

COUNTRY COUNT: 1

PATENT INFORMATION:

APPLICATION DETAILS:

PATENT NO KIND		APPLICATION	DATE
US 2003143216 A1	Div ex	US 1998-39198 US 1999-267574 US 2002-161547	19980312 19990312 20020603

FILING DETAILS:

PA'	rent no	KIND			PAI	ENT NO	
US	20031432	16 A1	CIP	of	US	6200951	
			Div	ex	US	6399571	

PRIORITY APPLN. INFO: US 1999-267574 19990312; US 1998-39198 19980312; US 2002-161547 20020603

AN 2003-829776 [77] WPIDS

CR 1999-551417 [46]; 2002-606631 [65]

AB US2003143216 A UPAB: 20031128

NOVELTY - A chitin-binding, chitinase-inactive **polypeptide** (I) comprising a chitin-binding fragment of 54 C-terminal amino acids of a fully defined human chitinase sequence (S1) of 466 amino acids as given in the specification, is new. (I) is chosen from **polypeptides** having sequence of amino acid residues 347-397 to 445 of (S1).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

- (1) a fusion **protein** (II) comprising (I) fused to a heterologous **polypeptide**;
 - (2) a composition (III) comprising (I) and a diluent;
- (3) a composition (IV) comprising (I) conjugated to an antifungal agent;
- (4) a composition (V) comprising (I) conjugated to a detectable label;
- (5) a kit (VI) for diagnosing the presence of chitin in a sample comprising the composition;
 - (6) a purified, isolated polynucleotide (VII) encoding (I);
 - (7) a vector (VIII) comprising (VII);
- (8) a host cell (IX) transformed or transfected with (VII) in a manner allowing the expression of (I) encoded by (VII) in (IX);
 - (9) a polypeptide produced by culturing (IX); and
- (10) a monoclonal antibody (X) that specifically binds to an epitope within the 54C-terminal amino acid of (S1).

 ACTIVITY Fungicide.

Anti-fungal activity of recombinant chitinase in vivo in mice was determined as follows. Female Balb/c mice, 6-8 weeks old, were administered 0.5, 5.0, 50 mg/kg recombinant human chitinase by intravenous injection in the tail vein. The mice was infected with the fungi, varying doses of test drug was administered to the animals and their survival is measured over time. Specifically, acute systemic candidiasis was achieved in mice by intraperitoneal or intravenous challenge of 10 multiply 106 colony forming units (CFU) candida albicans. The recombinant

chitinase was administered before or at 1 to 5 hours after challenge, and the number of survivors was determined after five days. In addition, the mice can be sacrificed and fungal load can be determined in specific organs. Alternatively, the mice were challenged with lower doses of fungi, e.g., Aspergillus (8-10 multiply 106 CFU) or Candida (1 multiply 106 CFU) in which case survival can be measured at more distant time points, e.g. 45 days. The long term fungicidal/fungistatic activity of a chitinase may be evaluated by continuing therapy for a week or more, e.g. 11 days, and following the animals over several weeks, e.g. 18 days to one month. The result showed that effective anti-fungal agent (recombinant chitinase) enhanced the long term survival of animals and reduced fungal load in blood and organs.

MECHANISM OF ACTION - Lysis of fungal cell wall and membrane. USE - (III) or (IV) is useful for treating (M1) fungal infection which involves administering (III) or (IV) to a subject suffering from fungal infection. (M1) further comprises administering a non-chitinase antifungal agent. (V) is useful for detecting the presence of chitin in a sample which involves contacting the sample with (V) and determining the amount of labeled polypeptide bound to chitin. (claimed).

(III), (IV) or (V) is useful for treating fungal infections such as candidiasis, aspergillosis, coccidioidomycosis, blastomycosis, paracoccidioidomycosis, histoplasmosis, cryptococcosis, chromoblastomycosis, sporotrichosis, mucormycosis, and the dermatophytoses can manifest as acute or chronic disease. (VII) is useful in hybridization assays to detect the capacity of cells to synthesize chitinase and for diagnostic methods useful for identifying a genetic alteration(s) in the chitinase locus that underlies a disease state or states. (X) is useful for detecting or quantifying the presence of chitin-binding domain, and for detecting or quantifying the presence of yeast or fungi, e.g., by adding a chitin-binding domain which binds to the yeast of fungi. (X) is also useful for detecting chitin-binding domain in human blood samples which indicates a disease state involving chitinase, such as Gaucher's disease. Dwg.0/0

L34 ANSWER 2 OF 18 MEDLINE on STN DUPLICATE 1

ACCESSION NUMBER: 2003510266 IN-PROCESS

DOCUMENT NUMBER: 22949199 PubMed ID: 14585681

TITLE: Cholera vaccine candidate 638: intranasal

immunogenicity and expression of a foreign antigen

from the pulmonary pathogen Coccidioides

immitis.

AUTHOR: Silva Anisia J; Mohan Archana; Benitez Jorge A CORPORATE SOURCE: Department of Microbiology, Biochemistry and

Immunology, Morehouse School of Medicine, 720 Westview Dr., SW 30310-1495, Atlanta, GA, USA.

VACCINE, (2003 Dec 1) 21 (32) 4715-21.

VACCINE, (2003 Dec 1) 21 (32) 4/15-21.

Journal code: 8406899. ISSN: 0264-410X.

PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

SOURCE:

FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals

ENTRY DATE: Entered STN: 20031031

Last Updated on STN: 20031031

AB Vibrio cholerae strain 638 is a live genetically attenuated

candidate cholera vaccine in which the CTXPhi prophage encoding cholera toxin has been deleted and hapA, encoding an extracellular Zn-dependent metalloprotease, was insertionally inactivated. Strain 638 was highly immunogenic when inoculated to adult Swiss mice by the intranasal route as judged by the induction of a strong serum vibriocidal antibody response. A side-by-side comparison of strain 638 with its isogenic hapA(+) precursor (strain 81) in the above model indicated that inactivation of hapA does not affect immunogenicity. The spherule-associated antigen 2/proline-rich antigen (Ag2/PRA) of Coccidioides immitis has been shown to protect mice against coccidioidomycosis to an extent dependent on the modes of antigen presentation and challenge with C. immitis arthrospores. In this work, we demonstrate the use of a live genetically attenuated V. cholerae strain to deliver Ag2/PRA. Ag2/PRA was expressed in 638 as a fusion protein with the Escherichia coli heat labile toxin B subunit leader peptide using the strong Tac promoter. The recombinant Ag2/PRA was efficiently expressed, processed and secreted to the periplasmic space. Intranasal immunizations of adult mice with strain 638 expressing Ag2/PRA induced serum vibriocidal antibody response to the vector strain and serum total IgG response to Ag2/PRA. Strain 638 expressing PRA could be recovered from trachea and lung up to 20h after immunization but was effectively cleared 72h post-inoculation.

L34 ANSWER 3 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: 2003-120579 [11] WPIDS DOC. NO. NON-CPI: N2003-096057

DOC. NO. NON-CPI: N2003-096057 DOC. NO. CPI: C2003-031163

TITLE: Identifying biologically active agents comprises cloning transfected cells into a cell array,

exposing the array to an agent to be tested, and detecting signals generated by a reporter molecule

as a result of exposure to the agent.

DERWENT CLASS: B04 D16 S03

INVENTOR(S): ANDREWS, P; DRAPER, J; WALSH, J

PATENT ASSIGNEE(S): (AXOR-N) AXORDIA LTD

COUNTRY COUNT: 100

PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

WO 2002090992 A2 20021114 (200311)* EN 90

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC

MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP

KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ

NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ

UA UG US UZ VN YU ZA ZM ZW

APPLICATION DETAILS:

PRIORITY APPLN. INFO: GB 2001-11004 20010504

AN 2003-120579 [11] WPIDS

AB WO 200290992 A UPAB: 20030214

NOVELTY - Screening (M1) for identifying biologically active agents, comprises:

- (i) providing a population of cells stably transfected with a nucleic acid encoding a reporter molecule;
 - (ii) cloning the transfected cells into a cell array;
- (iii) exposing the array to at least one agent to be tested; and
- (iv) detecting a signal generated by the reporter molecule as a result of exposure to the agent.

DETAILED DESCRIPTION - Screening (M1) for identifying biologically active agents, comprises:

- (i) providing a population of cells which have been stably transfected with a nucleic acid molecule encoding a reporter molecule;
 - (ii) cloning the transfected cells into a cell array;
- (iii) exposing the array to at least one agent to be tested; and
- (iv) detecting a signal generated by the reporter molecule as a result of exposure to the agent.

INDEPENDENT CLAIMS are also included for the following:

- (1) An agent identified by M1;
- (2) A cell or a cell array obtained by M1;
- (3) Screening (M2) for the isolation of a gene, comprising:
- (a) steps (i)-(iv) of M1;
- (b) extracting nucleic acid from a cell sample comprising the cell array; and
- (c) determining the sequence of at least part of the genomic region into which the nucleic acid encoding the reporter molecule has integrated;
- (4) Comparing the biological activity of a reference agent with at least one other agent, comprising:
 - (a) steps (i) and (ii) of the above method;
 - (b) preparing a duplicate array;
 - (c) step (iii) of the above method;
 - (d) exposing the duplicate array to a reference agent; and
- (e) detecting a signal generated by the reporter molecule as a result of exposure to the agent and to the reference agent; and
- (5) A vector comprising a reporter molecule, a splice acceptor site and an internal ribosome entry site, where the splice acceptor and the internal ribosome entry site are operably linked to facilitate expression of the reporter molecule.
- USE The method is useful in identifying biologically active agents and the genes through which the agents act, in screening potential drugs for their ability to activate certain drug targets in a high-throughput assay, in identifying relationships between signaling pathways and specific signals that could be useful in eventually directing the differentiation of embryonic stem cells, and in toxicology assays by testing for unwanted activation or inhibition of specific signaling pathways. The **vector** is useful in carrying out the above methods (claimed).

L34 ANSWER 4 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: 2002-566694 [60] WPIDS

DOC. NO. CPI: C2002-160652

TITLE: Constructing strains for identifying gene products

as effective targets for therapeutic intervention, by inactivating in the strain one allele of a gene

and placing other allele of the gene under

conditional expression.

DERWENT CLASS: B04 C06 D16

INVENTOR(S): BOONE, C; BUSSEY, H; JIANG, B; OHLSEN, K L; ROEMER,

T

PATENT ASSIGNEE(S): (ELIT-N) ELITRA PHARM INC

COUNTRY COUNT: 101

PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

WO 2002053728 A2 20020711 (200260)* EN 167

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC

MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ

NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ

UA UG US UZ VN YU ZA ZW

US 2003180953 A1 20030925 (200364)

EP 1348027 A2 20031001 (200365) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

APPLICATION DETAILS:

	PAT	TENT NO	KIND		API	PLICATION	DATE
1	WO	200205372	8 A2		WO	2001-US49486	20011226
1	US	200318095	3 A1	Provisional	US	2000-259128P	20001229
				CIP of	US	2001-792024	20010220
				Provisional	US	2001-314050P	20010822
					US	2001-32585	20011220
	EΡ	1348027	A2		EP	2001-991419	20011226
					WO	2001-US49486	20011226

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1348027	A2 Based on	WO 2002053728

PRIORITY APPLN. INFO: US 2001-314050P 20010822; US 2000-259128P

20001229; US 2001-792024 20010220; US

2001-32585 20011220

AN 2002-566694 [60] WPIDS

AB WO 200253728 A UPAB: 20020919

NOVELTY - Constructing (M1) a strain of diploid fungal cells in which both alleles of a gene are modified, comprising modifying one allele by insertion or replacement by a cassette having an expressible selectable marker, and modifying other allele by recombination, of a promoter replacement fragment with a heterologous promoter, so that expression of the second allele is regulated by the promoter, si new.

DETAILED DESCRIPTION - Constructing (M1) a strain of diploid

fungal cells in which both alleles of a gene are modified, comprising constructing a strain of diploid fungal cells in which both alleles of a gene are modified, comprises modifying one allele in diploid fungal cells by recombination using a gene disruption cassette comprising a first nucleotide sequence encoding an expressible selectable marker, to provide heterozygous diploid fungal cells in which the first allele is inactivated, and modifying the second allele by recombination using a promoter replacement fragment comprising a second nucleotide sequence encoding a heterologous promoter, so that expression of the second allele is regulated by the heterologous promoter, where the gene encodes a polypeptide required for proliferation of Candida albicans, where the **polypeptide** is chosen from the amino acid sequence (S1) of 932 essential genes listed in the specification. INDEPENDENT CLAIMS are also included for the following:

- (1) assembling (M2) a collection of diploid fungal cells each compring modified alleles of a different gene, by modifying both alleles of the gene by (M1) and repeating the steps several times, where a different gene is modified with each repetition;
- (2) a strain (I) of diploid fungal cells comprising modified alleles of a gene, where the first allele is inactivated by a gene disruption cassette comprising a nucleotide sequence encoding an expressible selectable marker, and the expression of the second allele is regulated by a heterologous promoter that is operably linked to the coding region of the second allele;
 - (3) a collection of diploid fungal strains comprising (I);
- (4) a nucleic acid molecule microarray comprising several nucleic acid molecules, each comprising a nucleotide sequence that is hybridizable to a target nucleotide sequence chosen from 932 nucleotide sequences (S2) of the open reading frame (ORF) of essential genes, gene names listed in the specification, no sequences are given;
- (5) a purified or isolated nucleic acid molecule (II) comprising a nucleotide sequence encoding a gene product required for proliferation of C. albicans, and comprising (S1);
- (6) a nucleic acid molecule (III) comprising at least 10-100 consecutive nucleotides of (S2);
- (7) a purified or isolated nucleic acid molecule (IV) obtained from an organism other than C. albicans or Saccharomyces cerevisiae comprising at least 30 % identity to a (S2), as determined using BLASTN version 2.0 with the default parameters;
- (8) a vector containing the promoter operably linked to (II), (III) or (IV);
 (9) a host cell containing the **vector** of (9);
- (10) a purified or isolated polypeptide comprising a sequence chosen from 61 sequences not given in the specification;
- (11) a purified or isolated polypeptide (V) obtained from an organism other than C. albicans or S. cerevisiae comprising at least 30 % similarity to (S1), as determined using FASTA version 3.0t78 with the default parameters;
- (12) a fusion protein comprising a fragment of a first polypeptide fused to a second polypeptide, the fragment at least 6 consecutive residues of (S1);
 - (13) producing (V);
- (14) identifying (M3) a compound which modulates the activity of a gene product encoded by a nucleic acid comprising (S2), by contacting the gene product with a compound, and determining if the

compound modulates the activity of the gene product;

- (15) eliciting an immune response in an animal, by introducing into the animal a composition comprising an isolated polypeptide having 6 consecutive residues of (S1);
- (16) a strain of C. albicans where a first allele of a gene comprising (S2) is inactive and a second allele is under the control of a heterologous promoter;
- (17) identifying a compound or binding partner that binds to a **polypeptide** comprising (S1) or its fragment;
- (18) identifying (M4) a compound having the ability to inhibit growth or proliferation of C. albicans, by reducing the level or activity of a gene product encoded by (S2) in the C. albicans cell relative to a wild type cell, where the reduced level is not lethal to the cell, contacting the cell with a compound and determining if the compound inhibits the growth or proliferation of the cell;
- (19) inhibiting (M5) growth or proliferation of C. albicans cells, by contacting the cells with the compound that reduce the level of or inhibit the activity of (S1) or (S2);
- (20) manufacturing an antimycotic compound, by screening several compounds to identify a compound that reduces the activity or level of a gene product encoded by (S2) and manufacturing the compound identified;
- (21) treating (M6) an infection of a subject by C. albicans, by administering compound (C) that reduces the activity or level of a gene product encoded by (S2);
 - (22) an antibody preparation (VI) which binds (V); and
- (23) correlating changes in the levels of **proteins** or gene transcripts with the inhibition of growth or proliferation of a diploid fungal cell, by generating a first **protein** expression profile for or transcription profile for a control diploid fungal cell which comprises two wild type alleles of the gene, culturing (I) under conditions where the second allele of the gene is underexpressed, not expressed or overexpressed, and generating a second **protein** expression profile for the cultured cells, and comparing the profiles.

ACTIVITY - Fungicide; Plant Antifungal.

No biological data is given.

MECHANISM OF ACTION - None given.

USE - (M1) is useful for constructing a strain of diploid fungal cells in which both alleles of a gene are modified. The diploid fungal cells having both alleles modified are useful for identifying a gene that is essential to the survival or growth of a fungus, a gene that contributes to the virulence and/or pathogenicity of a fungus, a gene that contributes to the resistance of a diploid fungus to an antifungal agent, an antifungal agent that inhibits the growth of a diploid fungus and for identifying a therapeutic agent for treatment of a mammalian disease. (M3) is useful for identifying a compound which modulates the activity of a gene product, preferably enzymatic activity, carbon compound catabolism, biosynthetic, transporter, transcriptional, translational, signal transduction, DNA replication and cell division activity. (M4) is useful for identifying a compound having the ability to inhibit growth or proliferation of C. albicans. (M5) is useful for inhibiting growth or proliferation of C. albicans cells. (M6) is useful for treating infection by C. albicans. (All claimed). Dwg.0/6

L34 ANSWER 5 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: 2002-666824 [71] WPIDS

DOC. NO. CPI: C2002-187137

TITLE: Nucleic acid molecules comprising fungal, e.g.

Cochliobolus heterostrophus, genes from a peptide synthetase gene cluster, useful for

identifying anti-fungal agents for treating fungal

infections such as pneumonia and arthritis.

DERWENT CLASS: C07 D16

INVENTOR(S): LU, S; TURGEON, B G; YODER, O

PATENT ASSIGNEE(S): (CORR) CORNELL RES FOUND INC; (LUSS-I) LU S; (SYGN)

SYNGENTA PARTICIPATIONS AG; (TURG-I) TURGEON B G;

(YODE-I) YODER O

COUNTRY COUNT: 100

PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

WO 2002042444 A2 20020530 (200271)* EN 316

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC

MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP

KE KG KP KR KZ LC LK LR \cdot LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA

NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ U UG US UZ VN YU ZA ZM ZW

AU 2002036448 A 20020603 (200277)

APPLICATION DETAILS:

PATENT NO KI	ND	APPLICATION	DATE
WO 2002042444	A2	WO 2001-US43381	20011121
AU 2002036448	A	AU 2002-36448	20011121

FILING DETAILS:

PAT	TENT	ИО	KIN)		PAT	ENT	ИО	
						 			
ΑΠ	2002	203644	18 A	Based	on	WO	2002	2042	444

PRIORITY APPLN. INFO: US 2000-252732P 20001122; US 2000-252649P 20001122

AN 2002-666824 [71] WPIDS

AB WO 200242444 A UPAB: 20030410

NOVELTY - Nucleic acid molecules comprising fungal, e.g.

Cochliobolus heterostrophus, genes from a peptide

synthetase gene cluster, e.g. an iron reductase and/or a permease or a major facilitator superfamily (MFS) transporter, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (N1) comprising a fungal nucleic acid segment which encodes a **polypeptide** which is substantially similar to a **polypeptide**, encoded by a nucleic acid sequence (NA1) comprising an open reading frame comprising the 2435 (S46), 1836 (S48), or 2073 (S55) base pair (bp) sequence defined in the specification, or their complements;

(2) an isolated polynucleotide (N2) comprising a fungal nucleic

acid segment which is substantially similar to NA1, or its complements;

- (3) an isolated polynucleotide (N3) comprising a fungal nucleic acid segment which hybridizes under stringent hybridization conditions to S46, S48, S55, or its complements;
- (4) an isolated ${\bf polypeptide}$ (P1) encoded by N1, N2 or N3;
- (5) an expression cassette comprising a promoter operably linked to N1, N2 or N3;
- (6) a **recombinant vector** comprising N1, N2 or N3, where the **vector** is capable of being stably transformed into a host cell;
- (7) a host cell comprising the expression cassette of (5) or the **vector** of (6);
- (8) a method (M1) for identifying an agent having fungicidal or mycocidal activity, comprising contacting a fungus with an agent that binds to or inhibits P1, and identifying an agent having fungicidal or mycocidal activity;
- (9) a method (M2) for identifying an inhibitor of a polypeptide, comprising contacting a host cell which expresses a polypeptide encoded by N1, N2 or N3 with an agent, and identifying an agent that inhibits the activity of the polypeptide;
 - (10) an agent identified by the M1 or M2;
- (11) a method of inhibiting the growth or pathogenicity of a fungus, comprising contacting the fungus with the agent of (10) in an amount sufficient to inhibit the growth or pathogenicity of the fungus;
- (12) a method for identifying an agent that modulates a polypeptide associated with pathogenicity of a fungus, comprising contacting a fungus with an agent that binds P1, and identifying an agent that modulates the pathogenicity of the fungus;
- (13) a method for identifying an agent that modulates the pathogenicity of a fungus, comprising contacting a fungus with an agent that inhibits the activity of Pl, and identifying an agent that modulates the pathogenicity of the fungus;
- (14) a method (M3) of identifying agents that alter the phenotype of a fungal pathogen or mycogen, comprising:
- (a) contacting an agent to be tested with one or more cells of a fungal pathogen or mycogen where:
- (i) the cells comprise a nucleotide sequence encoding a **polypeptide** that is substantially similar to the 812 (S47), 611 (S49) or 487 (S56) amino acid sequence defined in the specification; or
- (ii) the cells have a mutation in N1, N2 or N3, where the mutation results in overexpression or underexpression of the encoded polypeptide; and
- (b) detecting or determining whether the agent selectively modulates expression or function or metabolic pathways associated with the **polypeptide**, therefore altering a phenotype of the cells relative to cells not contacted with the agent;
 - (15) an isolated antibody (Abl) which specifically binds to P1;
- (16) a method (M4) to prevent or inhibit infection of an animal or plant by a fungal pathogen, comprising administering to the animal or plant an effective amount of the agent of (10) for a time and under conditions sufficient to inhibit or prevent fungal growth or reproduction;
 - (17) the sequence of N1, N2 or N3, or the amino acid sequence

of Pl stored on a computer readable medium; and

(18) a transformed plant, the genome of which expresses a chimeric DNA molecule which encodes a gene product which confers resistance or tolerance to the plant to a fungal pathogen by inhibiting fungal iron metabolism or siderophore production.

ACTIVITY - Fungicidal; Mycocidal; Antibacterial; Antiarthritic; Dermatological; Antiinflammatory.

No biological data given.

MECHANISM OF ACTION - Antisense therapy.

No biological data given.

USE - The polynucleotides and polypeptides are useful for identifying a novel fungicidal or mycocidal mode of action which permits rapid discovery of novel inhibitors of gene products that are useful as fungicides or mycocides.

The agents and antisense DNA are useful as fungicides to suppress the growth of pathogenic fungi. The fungal pathogens include plant pathogens such as Septoria trici, or Cochliobolus heterostrophus, or animal pathogens such as Candida albicans.

The anti-fungal agents are particularly useful for treating fungal infections of vertebrates, including immunocompromised vertebrates, for e.g. pneumonia, arthritis, miliary disease, bone and joint infection, skin disease, aesophagitis, vaginitis, onychomycosis, and inflammation of urinary tract, kidney, liver, brain, gastrointestinal tract and lung. Dwg.0/10

L34 ANSWER 6 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN

ACCESSION NUMBER: 2002-739924 [80] WPIDS DOC. NO. NON-CPI: N2002-582921

DOC. NO. CPI: C2002-209497

TITLE: New recombinant spherical outer wall

glycoproteins from Coccidioides immitis,

useful as antigens for serodiagnosis or induction

of an immune response. B04 C06 C07 D16 S03

DERWENT CLASS: COLE, G T; HUNG, C INVENTOR(S):

PATENT ASSIGNEE(S): (MEDI-N) MEDICAL COLLEGE OHIO

COUNTRY COUNT: PATENT INFORMATION:

PATENT NO KIND DATE WEEK LA PG

US 2002106380 A1 20020808 (200280) * 26

APPLICATION DETAILS:

APPLICATION DATE PATENT NO KIND US 2002106380 A1 Provisional US 2000-202754P 20000508 US 2001-850677 20010507

PRIORITY APPLN. INFO: US 2000-202754P 20000508; US 2001-850677

20010507

AN 2002-739924 [80] WPIDS US2002106380 A UPAB: 20021212 AB

NOVELTY - A recombinant spherical outer wall glycoprotein 58 (SOWgp58) (I) from Coccidioides immitis, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

- (1) antigens (II) for serodiagnosis of coccidioidomycosis comprising a recombinant spherical outer wall glycoprotein (SOWgp);
- (2) an isolated nucleic acid (III) that hybridizes under highly stringent conditions to a probe of sequences (S1: 900 base pairs), (S3: 1244 base pairs), (S9: 1504 base pairs) or (S11: 1563 base pairs), or their complements;
- (3) purified **polypeptides** (IV) that comprise sequences (S2: 299 amino acids (aa)), (S4: 328 aa), (S5: 15 aa), (S6: 10 aa), (S7: 10 aa), (S8: 14 aa); (S10: 375 aa) or (S12: 422 aa), all (sic) with up to 20 conservative aa substitutions;
- (4) eliciting (M1) a proliferative response from monocytes, in animals that show a positive skin test, by administering Ag; and
 - (5) identifying (M2) the SOW gp58, gp66 and/or gp82 genes. ACTIVITY Fungicide.

No biological data given.

 ${\tt MECHANISM}$ OF ACTION - Induction of specific humoral and cellular immune responses.

Purified SOWgp58 from the Silveria isolate was tested in an essentially conventional proliferation assay (thymidine incorporation) against peripheral blood mononuclear cells. At a concentration of 50 micro g/ml in the cell culture medium it produced a stimulation index of 16, using cells from subjects who gave a positive skin test for C. immitis, but the index was only about 1 when using cells from subjects who gave a negative skin test.

- $\ensuremath{\mathsf{USE}}$ Spherical outer wall glycoproteins (SOW) are antigens useful for:
- (a) serodiagnosis of **coccidioidomycosis** (San Joaquin Valley fever); and
- (b) for stimulating proliferation of peripheral blood monocytes, for protection against this disease.
- (III) that encode SOW are useful as probes and primers for cloning, and as diagnostic probes. $\ensuremath{\mathsf{Dwg.0/9}}$

L34 ANSWER 7 OF 18 MEDLINE on STN DUPLICATE 2

ACCESSION NUMBER: 2002322692 MEDLINE

DOCUMENT NUMBER: 22060669 PubMed ID: 12065493

TITLE: Role of signal sequence in vaccine-induced protection

against experimental coccidioidomycosis.

AUTHOR: Jiang Chengyong; Magee D Mitchell; Ivey F Douglas;

Cox Rebecca A

CORPORATE SOURCE: Department of Microbiology, University of Texas

Health Science Center at San Antonio, San Antonio,

Texas 78229, USA.

SOURCE: INFECTION AND IMMUNITY, (2002 Jul) 70 (7) 3539-45.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200207

ENTRY DATE: Entered STN: 20020615

Last Updated on STN: 20020731 Entered Medline: 20020730

AB The vaccine efficacy of the gene sequence encoding the signal peptide of the antigen known as antigen 2 or proline-rich antigen (Ag2/PRA), an immunodominant antigen present in the cell wall of the fungal pathogen Coccidioides immitis, was investigated in a murine model of coccidioidomycosis. Expression plasmids for Ag2/PRA(1-18) DNA (signal sequence), Ag2/PRA(19-194) DNA (lacking the signal sequence), and Ag2/PRA(1-194) DNA (full length) were inserted in the pVR1012 vector, and the constructs were used to vaccinate the highly susceptible BALB/c mouse strain. Immunization with the signal gene sequence significantly reduced the fungal burden in the lungs and spleens of mice 12 days after intraperitoneal challenge with a lethal dose of 2,500 C. immitis arthroconidia, to a level comparable to the protection induced in mice immunized with the full-length Ag2/PRA(1-194) DNA. The Ag2/PRA(19-194) gene protected mice but to a significantly lower level than the signal sequence or the full-length Ag2 gene. The immunizing capacity of Ag2/PRA(1-18) was not attributable to a nonspecific immunostimulatory effect of DNA, as evidenced by the fact that mice immunized with a frameshift mutation of Ag2/PRA(1-18) were not protected against challenge. Furthermore, a synthetic peptide corresponding to the translated sequence of Ag2/PRA(1-18) DNA protected mice, albeit at a lower level than the Ag2/PRA(1-18) DNA vaccine. The protection induced with the signal gene vaccine correlated with the production of gamma interferon when splenocytes from Ag2/PRA(1-18)-immunized mice were stimulated with recombinant full-length Ag2 and was not associated with the production of anti-Coccidioides immunoglobulin G antibody. This is the first study to establish that a signal peptide sequence alone, administered as a gene vaccine or synthetic peptide, can induce protective immunity against a microbial pathogen.

```
L34 ANSWER 8 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT ON STN ACCESSION NUMBER: 2001-489080 [53] WPIDS
DOC. NO. NON-CPI: N2001-361848
DOC. NO. CPI: C2001-146921
TITLE: Identifying genes essential to fungal metabolisms and identifying potential therapeutic agents that target these genes.

DERWENT CLASS: B04 D16 S03
```

INVENTOR(S): BOONE, C; BUSSEY, H; JIANG, B; ROEMER, T PATENT ASSIGNEE(S): (ELIT-N) ELITRA PHARM INC

PATENT ASSIGNED (S): (ELIT-N) E

COUNTRY COUNT:

PATENT INFORMATION:

NL PT RO SE SI TR KR 2002097180 A 20021231 (200330) JP 2003523197 W 20030805 (200353)

370

APPLICATION DETAILS:

PATENT NO K	IND	APE	PLICATION	DATE
WO 2001060975	A2	WO	2001-US5551	20010220
AU 2001043204	A	ΑU	2001-43204	20010220
EP 1292668	A2	ΕP	2001-916144	20010220
		WO	2001-US5551	20010220
KR 2002097180	A	KR	2002-710815	20020819
JP 2003523197	W	JP	2001-560347	20010220
		WO	2001-US5551	20010220

FILING DETAILS:

PAT	TENT NO	KIND			PA:	TENT NO
AU	200104320)4 A	Based	on	WO	2001060975
EΡ	1292668	A2	Based	on	WO	2001060975
JΡ	200352319	97 W	Based	on	WO	2001060975

PRIORITY APPLN. INFO: US 2000-183534P 20000218

AN 2001-489080 [53]. WPIDS

AB WO 200160975 A UPAB: 20010919

NOVELTY - Methods for constructing fungal strains useful for identification and validation of gene products as target for therapeutic agents, for identifying and validating gene products as target for therapeutic agents, collections id identified genes and screening assays for the discovery of new drugs, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) a method (I) of constructing a strain of diploid fungal cells (DFCs) in which both alleles (Als) of a gene are modified and for assembling a collection of DFCs each of which comprises modified Als of a different gene;
- (2) a strain of DFCs comprising modified Als of a gene, wherein the first Al of the gene is inactivated by **recombination** using a gene disruption cassette comprising a nucleotide (Nt) sequence (seq) encoding an expressible selectable marker and the expression of the second Al of the gene is regulated by a heterologous promoter that is operably linked to the coding region of the second Al of the gene;
- (3) a collection (III) of diploid fungal strains (II) in which each strain comprises modified Als of a different gene, and all the different genes in the genome of the fungus are modified and represented in the collection;
- (4) a NAM microarray (IV) comprising a plurality of nucleic acid molecules (NAMs) (each NAM comprises a Nt seq that is hybridizable to a target Nt seq selected from 62 defined seqs given in the specification, a Nt seq that is hybridizable to the Nt seq of a gene that is either essential to the growth of a DFC or contributes to the virulence and/or pathogenicity of the DFCs against a host organism;
- (5) a method (V) for identifying a gene that is essential to the metabolism/life cycle of a fungus comprising:

- (a) culturing the DFCs (II) under conditions in which the second Al of the gene is substantially under expressed (expd) or not expd; and
- (b) determining:
- (i) viability of the cells (a loss or reduction of viability as compared to a control indicates that the modified gene is essential to the survival of the fungus);
- (ii) growth of the cells (a loss or reduction of growth of the cells as compared to a control indicates that the modified gene is essential to the growth of the fungus);
- (iii) growth of the cells (a loss or reduction of growth of the cells as compared to a control indicates that the modified gene is essential to the growth of the fungus);
- (iv) viability of the cells (an increase in viability as compared to a control indicates that the modified gene contributes to the resistance of the diploid fungus to the antifungal agent);
- (6) a method (VI) for identifying an antifungal agent that inhibits the growth of a diploid fungus;
- (7) a method (VII) for identifying a therapeutic agent for treatment of a mammalian disease;
- (8) a method (VIII) for correlating changes in the levels of **proteins** with the inhibition of growth or proliferation of a DFC, comprising:
- (a) generating a first protein expression profile for a control DFC which comprises two wild type Als of the gene;
- (b) culturing DFCs (II) under conditions wherein the second Al of the gene is substantially under expd, not expd or over expd, and generating a second **protein** expression profile for the cultured cells; and
- (c) comparing the first protein expression profile with the second protein expression profile to identify changes in the levels of proteins;
- (9) a method (IX) for correlating changes in the levels of gene transcripts with the inhibition of growth or proliferation of a DFC, comprising:
- (a) generating a transcription profile for a control DFC which comprises two wild type Als of the gene;
- (b) culturing DFCs (II) under conditions wherein the second Al of the gene is substantially under expd, not expd or over expd and generating a second transcription profile for the cultured cells; and
- (c) comparing the first transcription profile with the second transcription profile to identify changes in the levels of gene transcripts;
- (10) a NAM (X) comprising a Nt seq encoding a gene product required for proliferation of Candida albicans (the gene product comprises a defined amino acid seq given in the specification);
- (11) a NAM (XI) comprising a fragment of comprising at least 10 to 100 consecutive Nts; a NAM comprising a Nt seq that hybridizes under stringent condition to a second NAM consisting of:
- (a) a Nt seq selected from the seqs given in the specification; or $% \left(\frac{1}{2}\right) =\frac{1}{2}\left(\frac{1}{2}\right) +\frac{1}{2}\left(\frac{1}{2}\right) +\frac{1}{2}\left$
- (b) a Nt seq that encodes a **polypeptide** comprising an amino acid seq defined in the specification (the stringent conditions comprises hybridization to filter-bound DNA in 6 multiply sodium chloride sodium citrate (SSC) at about 45 deg. C followed by one or more washes in 0.2 multiply SSC/0.1 % sodium dodecyl sulfate (SDS) at about 50-65 deg. C);

- (12) a NAM (XII) obtained from an organism other than Candida albicans or Saccharomyces cerevisiae comprising a Nt seq having at least 30% identity to a defined seq given in the specification, fragments of at least 25 consecutive Nts, and/or seqs complementary to them as determined using BLAST-N version 2.0 with the default parameters;
- (13) a **vector** (XIII) comprising a promoter operably linked to the NAMs above;
 - (14) a host cell (XIV) containing the vector (XIII);
- (15) a polypeptide (XV) comprising a defined amino acid seq given in the specification;
- (16) a polypeptide (XVI) obtained from an organism other than Candida albicans or Saccharomyces cerevisiae comprising an amino acid seq having at least 30% similarity to an amino acid seq defined in the specification as determined using FASTA version 3.0t78 with the default parameters;
- (17) a fusion protein (XVII) comprising a fragment of a polypeptide fused to a second polypeptide (the fragment comprises at least 6 consecutive residues of a defined amino acid seq given in the specification;
- (18) a method (IXX) of producing a polypeptide, comprising introducing into a cell, a vector comprising a promoter operably linked to a Nt seq encoding a polypeptide comprising a defined amino acid seq given in the specification and culturing the cell so that the Nt seq is expd; and
- (19) a method (XX) of producing a polypeptide, comprising providing a cell which comprises a heterologous promoter operably linked to a Nt seq encoding a polypeptide comprising a defined amino acid seq given in the specification and culturing the cell so that the Nt seq is expd.

Note: Other INDEPENDENT CLAIMS are included but have had to be omitted due to lack of space.

USE - The methods are used to identify agents that may be used in the treatment of fungal infections. $\ensuremath{\mathsf{Dwg.0/6}}$

L34 ANSWER 9 OF 18 MEDLINE on STN DUPLICATE 3

ACCESSION NUMBER:

2001248085 MEDLINE

DOCUMENT NUMBER:

21189198 PubMed ID: 11292702

TITLE:

Recombinant urease and urease DNA of

Coccidioides immitis elicit an immunoprotective response against

coccidioidomycosis in mice.

AUTHOR: Li I
CORPORATE SOURCE: Depa

Li K; Yu J J; Hung C Y; Lehmann P F; Cole G T Department of Microbiology and Immunology, Medical

College of Ohio, Toledo, Ohio 43614-5806, USA.

CONTRACT NUMBER: AI19149 (NIAID)

AI37232 (NIAID)

SOURCE:

INFECTION AND IMMUNITY, (2001 May) 69 (5) 2878-87.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY:

United States

DOCUMENT TYPE:

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT:

Priority Journals

ENTRY MONTH:

200105

ENTRY DATE:

Entered STN: 20010517

Last Updated on STN: 20010517 Entered Medline: 20010510

Coccidioides immitis antigens which stimulate a T helper AΒ cell 1 (Th1) pathway of host immune response are considered to be essential components of a vaccine against coccidioidomycosis Recombinant urease (rURE) and recombinant heat shock protein 60 (rHSP60) of C. immitis were expressed in Escherichia coli and tested as vaccine candidates in BALB/c mice. A synthetic oligodeoxynucleotide which contained unmethylated CpG dinucleotides and was previously shown to enhance a murine Th1 response was used as an immunoadjuvant. T cells isolated from the spleens and lymph nodes of the rURE- and rHSP60-immune mice showed in vitro proliferative responses to the respective recombinant protein, but only those T lymphocytes from rURE-immunized mice revealed markedly elevated levels of expression of selected Th1-type cytokine genes. BALB/c mice immunized subcutaneously with rURE and subsequently challenged by the intraperitoneal (i.p.) route with a lethal inoculum of C. immitis arthroconidia demonstrated a significant reduction in the level of C. immitis infection compared to control animals. rHSP60 was much less effective as a protective antigen. Evaluation of cytokine gene expression in lung tissue and levels of recombinant urease-specific immunoglobulins (immunoglobulin G1 [IgG1] versus IgG2a) in murine sera at 12 days after challenge provided additional evidence that immunization with rURE stimulated a Th1 response to the pathogen. Urease was further evaluated by expression of the URE gene in a mammalian plasmid vector (pSecTag2A.URE) which was used to immunize mice by the intradermal route. In this case, 82% of the vector construct-immunized animals survived more than 40 days after i.p. infection, compared to only 10% of the mice immunized with the vector alone. In addition, 87% of the pSecTag2A.UREimmunized survivors had sterile lungs and spleens. These data support the need for further evaluation of the C. immitis urease as a candidate vaccine against coccidioidomycosis.

L34 ANSWER 10 OF 18 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2002:223315 BIOSIS DOCUMENT NUMBER: PREV200200223315

TITLE: Replacement of the gene which encodes a major

immunoreactive cell surface antigen and adhesin

(SOWgp) of the human fungal pathogen

Coccidioides immitis.

AUTHOR(S): Hung, C. [Reprint author]; Reichard, U. [Reprint

author]; Yu, J. [Reprint author]; Cole, G. T.

[Reprint author]

CORPORATE SOURCE: Medical College of Ohio, Toledo, OH, USA

SOURCE: Abstracts of the General Meeting of the American

Society for Microbiology, (2001) Vol. 101, pp. 365.

print.

Meeting Info.: 101st General Meeting of the American

Society for Microbiology. Orlando, FL, USA. May 20-24, 2001. American Society of Microbiology.

ISSN: 1060-2011.

DOCUMENT TYPE: Conference; (Meeting)

Conference; Abstract; (Meeting Abstract)

LANGUAGE: English

ENTRY DATE: Entered STN: 3 Apr 2002

Last Updated on STN: 3 Apr 2002

AB We have previously cloned and expressed a major parasitic cell surface antigen (SOWgp) of C. immitis which, upon immunization elicits both antibody and T cell responses in BALB/c mice. Our data also showed that the recombinant SOWgp has high affinity for laminin and fibronectin of the extracellular matrix (ECM). To confirm that the SOWgp functions as an adhesin, the SOWgp gene was deleted by a double, locus-specific crossover event. This resulted in replacement of 1.8-kb fragment of the SOWgp gene with a 3.6-kb DNA construct that encodes a hygromycin resistant gene from the pAN7.1 vector. Results of PCR analysis, Southern hybridization, and immunoblot assays of parasitic cell homogenates of the Dsowgp mutant compared to the parental strain confirmed that the SOWgp gene was replaced and the antigen was no longer produced. This is the first report of a successful targeted gene knockout of C. immitis using the double crossover strategy. Comparative immunoelectron-microscopic examinations of the isolated, crude outer parasitic cell wall fraction of the DELTAsowqp and parental strains showed total loss of patient antibody reactivity with the former. The DELTAsowqp parasitic cells showed 20-50% reduction in their ability to bind to human and murine ECM. Virulence studies of the DELTAsowgp strain in intranasally-challenged BALB/c mice showed 20% survival compared to none in the case of mice challenged with the parental strain. It is apparent that deletion of SOWgp production did not eliminate the ability of the pathogen to cause disease. Preliminary investigations of the influence of recombinant SOWqp on immune murine T cells in vitro suggested that the protein stimulates a dominant Th2 response, demonstrated by elevated levels of IL-5 production. Our hypothesis is that SOWqp has a major impact on disseminated coccidioidal infection by compromising the host immune pathway toward a detrimental Th2 response.

L34 ANSWER 11 OF 18 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2002:223274 BIOSIS DOCUMENT NUMBER: PREV200200223274

TITLE: Isolation and characterization of a macrophage

binding protein of Coccidioides

immitis.

AUTHOR(S): Cole, G. T. [Reprint author]; Fradin, C. [Reprint

author]

CORPORATE SOURCE: Medical College of Ohio, Toledo, OH, USA

SOURCE: Abstracts of the General Meeting of the American

Society for Microbiology, (2001) Vol. 101, pp. 356.

print.

Meeting Info.: 101st General Meeting of the American

Society for Microbiology. Orlando, FL, USA. May 20-24, 2001. American Society of Microbiology.

ISSN: 1060-2011.

DOCUMENT TYPE: Conference; (Meeting)

Conference; Abstract; (Meeting Abstract)

LANGUAGE: English

ENTRY DATE: Entered STN: 3 Apr 2002

Last Updated on STN: 3 Apr 2002

AB Early studies have demonstrated the significance of the interplay between Coccidioides immitis and macrophages during coccidioidomycosis. In this study we report the

purification of a ligand expressed at the surface of endospores of

C. immitis which binds to an unknown receptor of a murine macrophage line (IC-21). Cell wall proteins of different stages of the parasitic cycle were labeled with biotin and subjected to beta-mercaptoethanol extraction. A single macrophage plasma membrane binding protein (MBP) with molecular size of 36-kDa was isolated from the endospore extract. The C. immitis MBP was purified and two internal peptides of the trypsin-digested fraction were sequenced. Degenerate primers were designed to PCR amplify a fragment of the MBP gene, and the PCR product was then used to screen a C. immitis genomic library for isolation of the full-length gene. The MBP gene is characterized by an open reading frame of 638 bp, and does not contain any introns. The MBP gene was subcloned into the pET28b expression vector and the recombinant, histidine-tagged fusion protein (rMBP) was produced by transformed E. coli stain BL21(DE3). The rMBP was shown to bind to the surface of both IC-21 cells and resident murine peritoneal macrophages. An in vitro study of temporal expression of the MBP gene during the parasitic cycle was conducted by RT-PCR and Northern blot analyses, and showed that maximum expression occurs at the endosporulation stage. Polyclonal antibody raised in guinea pigs against the rMBP was used for immunoblot analyses of beta-mercaptoethanol extracts of intact parasitic cells, as well as total cell homogenates of the saprobic and parasitic phases of C. immitis. The results showed that the rMBP was present only in beta-mercaptoethanol extracts and homogenates of first generation round cells and endospores. suggest that the newly-isolated MBP of C. immitis plays a pivotal role in the course of coccidioidal infections:

```
L34 ANSWER 12 OF 18 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER:
                      1999-551417 [46]
                                        WPIDS
                      2002-606631 [65]; 2003-829776 [77]
CROSS REFERENCE:
                     N1999-407989
DOC. NO. NON-CPI:
DOC. NO. CPI:
                      C1999-161024
                      Novel chitin-binding fragments of human chitinase
TITLE:
                      used to treat fungal infections in animals.
DERWENT CLASS:
                      B04 C06 D16 S03
                      GRAY, P W; TJOELKER, L W
INVENTOR(S):
                     (ICOS-N) ICOS CORP
PATENT ASSIGNEE(S):
COUNTRY COUNT:
                      86
PATENT INFORMATION:
```

```
PATENT NO KIND DATE
                       WEEK
WO 9946390 A1 19990916 (199946) * EN
                                        83
  RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC
      MW NL OA PT SD SE SL SZ UG ZW
   W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
       FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK
       LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG
       SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
AU 9929989
            A 19990927 (200006)
             A 20001121 (200065)
BR 9908724
NO 2000004522 A 20001101 (200065)
             A1 20010228 (200113)
EP 1078073
                                  EN
    R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
US 6200951
             B1 20010313 (200120)
CZ 2000003308 A3 20010711 (200147)
```

```
HU 2001001078 A2 20010730 (200157)
SK 2000001354 A3 20010710 (200157)
MX 2000008863 A1 20010301 (200170)
JP 2002505882 W 20020226 (200219) 86
CN 1357046 A 20020703 (200265)
AU 763582 B 20030724 (200355)
```

APPLICATION DETAILS:

PA:	rent no k	IND	API	PLICATION	DATE
ΑÜ	9946390 9929989 9908724	A1 A A	AU BR	1999-US5343 1999-29989 1999-8724 1999-US5343	19990312 19990312 19990312 19990312
NO	2000004522	A	WO	1999-US5343 1999-US5343 2000-4522	19990312 19990312 20000911
EP	1078073	A1	ΕP	1999-911320 1999-US5343	19990312 19990312
	6200951 2000003308	B1 A3		1998-39198	19980312 19990312
			CZ	2000-3308	19990312
	2001001078		HU	1999-US5343 2001-1078	19990312 19990312
SK	2000001354	A3 '		1999-US5343 2000-1354	19990312 19990312
MX	2000008863	A1	MX	2000-8863	20000911
JP	2002505882	W			19990312
			JP		19990312
	1357046	A		1999-805990	19990312
ΑU	763582	В	ΑU	1999-29989	19990312

FILING DETAILS:

PATENT NO K	IND	PATENT NO
EP 1078073 CZ 2000003308 HU 2001001078 SK 2000001354 JP 2002505882	A2 Based on A3 Based on	WO 9946390 WO 9946390 WO 9946390 WO 9946390 WO 9946390 WO 9946390 WO 9946390 AU 9929989
	Based on	WO 9946390

PRIORITY APPLN. INFO: US 1998-39198 19980312

AN 1999-551417 [46] WPIDS

CR 2002-606631 [65]; 2003-829776 [77]

AB WO 9946390 A UPAB: 20031128

NOVELTY - Novel human chitinase **polypeptide** and polynucleotide fragments have chitin-binding activity but lack chitinase enzymatic activity.

DETAILED DESCRIPTION - A chitin-binding, chitinase-inactive polypeptide (I) comprises a chitin-binding fragment of the 54 C-terminal amino acids (aa) of human chitinase having a 466 aa sequence (S1) (given in the specification).

INDEPENDENT CLAIMS are also included for the following:

- (1) a chitin-binding, chitinase-inactive polypeptide comprising as residues X-Y of (S1), where X is a consecutive integer from 347 to 397 and Y is 445;
- (2) a fusion protein comprising (I) fused to a heterologous polypeptide (e.g. an enzyme);
- (3) a composition comprising (I) and a diluent, optionally further comprising a non-chitinase anti-fungal agent;
- (4) a composition comprising (I) or the fusion protein of (1) conjugated to an anti-fungal agent;
- (5) treating fungal infection, comprising administering to a subject suffering from fungal infection the composition of (3) or (4), optionally further comprising administering a non-chitinase anti-fungal agent;
- (6) a composition comprising (I) or the fusion protein of (1) conjugated to a detectable label, especially radioisotopes, fluorophores, dyes, electron-dense compounds or enzymes;
- (7) determining the presence of chitin in a sample, comprising contacting the sample with the composition of (6), and determining the amount of labelled polypeptide bound to chitin;
- (8) a purified, isolated polynucleotide (especially DNA) encoding (I);
 - (9) a vector comprising the DNA of (8);
- (10) a host cell stably transformed or transfected with the DNA of (8) in a manner allowing the expression of (I), and
- (11) a monoclonal antibody that specifically binds to an epitope within the 54 C-terminal amino acids of human chitinase having a sequence (S1).

ACTIVITY - Chitin-binding.

MECHANISM OF ACTION - None given.

USE - Chitinase fragments can be used to screen for proteins or other molecules that specifically bind to the chitin-binding domain of human chitinase or that modulate its activity. These compounds are useful for immunization, as well as for purifying chitinase, as well as for detection and quantification of chitinase. Polynucleotide fragments of the invention are useful as a source of probes and primers, and to express the proteins recombinantly. The chitinase fragments, when conjugated to antifungal compounds, are used to treat animals, especially humans, infected with chitin-containing parasites such as fungi. Fungal infection treated include candidiasis, aspergillosis, coccidioidomycosis, blastomycosis, paracoccidioidomycosis, mucormycosis, histoplasmosis, cryptococcosis, chromoblastomycosis, sporotrichosis, and dermatophytoses.

ADVANTAGE - Chitin can be degraded by the enzyme chitinase. Use of whole chitinase protein for treating infections, especially fungal infections, is problematic. In view of the increasing incidences of life- threatening fungal infection in e.g. immunocompromised individuals, there exists a need fro identifying new compounds for treating fungal infection. The chitin-binding fragments of the present invention provide this need. Dwg.0/0

L34 ANSWER 13 OF 18

MEDLINE on STN

DUPLICATE 4

ACCESSION NUMBER: 1999085554 DOCUMENT NUMBER:

MEDLINE

TITLE:

99085554 PubMed ID: 9868663

Detecting serum antibodies to a purified

recombinant proline-rich antigen of Coccidioides immitis in patients with

coccidioidomycosis.

AUTHOR: Orsborn K I; Galgiani J N

CORPORATE SOURCE: Research and Medical Services, Veterans Affairs

Medical Center, Tucson, Arizona, USA.

SOURCE: CLINICAL INFECTIOUS DISEASES, (1998 Dec) 27 (6)

1475-8.

Journal code: 9203213. ISSN: 1058-4838.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199903

ENTRY DATE: Entered STN: 19990324

Last Updated on STN: 19990324 Entered Medline: 19990308

AB In previous work, antibodies in serum samples from patients with coccidioidomycosis were found to react with a proline-rich antigen (PRA) isolated from spherules of Coccidioides immitis, and the gene encoding this antigen was cloned. expressed and purified recombinant PRA (rPRA) by removing the majority of amino acids contributed by the vector from the fusion protein. Purified rPRA reacted with serum IgG antibodies in 37 of 42 patients with culture-proven progressive pulmonary or extrapulmonary coccidioidal disease; specific antibodies in dilutions ranging from 1:40 to 1:102,400 were demonstrated (sensitivity, 88%). In contrast, for > 95% of patients without coccidioidomycosis reactivity of < 1:40 was demonstrated (specificity, 97%). Of 18 patients with primary self-limited coccidioidomycosis, none had detectable antibodies in serum samples collected up to 141 days after illness began. The association of antibodies to rPRA with progressive infection may have prognostic value.

L34 ANSWER 14 OF 18 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on

STN

ACCESSION NUMBER: 1997:500830 BIOSIS DOCUMENT NUMBER: PREV199799800033

TITLE: Isolation and characterization of the urease gene

(URE) from the pathogenic fungus Coccidioides

immitis.

AUTHOR(S): Yu, Jieh-Juen; Smithson, S. L.; Thomas, Pei W.;

Kirkland, Theo N.; Cole, Garry T. [Reprint author]

CORPORATE SOURCE: Dep. Microbiol. Immunol., Med. Coll. Ohio, 3000

Arlington Ave., Toledo, OH 43699, USA

SOURCE: Gene (Amsterdam), (1997) Vol. 198, No. 1-2, pp.

387-391.

CODEN: GENED6. ISSN: 0378-1119.

DOCUMENT TYPE: Article LANGUAGE: English

ENTRY DATE: Entered STN: 21 Nov 1997

Last Updated on STN: 21 Nov 1997

The urease (URE)-encoding gene from Coccidioides immitis (Ci), a respiratory fungal pathogen of humans, was cloned, sequenced, chromosome-mapped and expressed. Both the genomic and cDNA sequences are reported. The transcription start point and poly(A)-addition site were confirmed. The URE gene contains eight introns and a 2517-bp ORF that translates a 839-amino-acid (aa) protein of 91.5 kDa and pI of 5.5, as deduced by computer

analysis of the nucleotide sequence. The translated **protein** revealed eight putative N-glycosylation sites. The deduced URE showed comparable levels of homology to reported URE of the jack bean plant (Canavalia ensiformis; 71.8%) and URE of several genera of bacteria (Bp, 71.7%; Hp, 68.3%; Ka, 71.6%; Pm, 71.9%). The URE gene was mapped to chromosome III of Ci and was shown to be a single copy gene by Southern hybridization. Expression of a 1687-bp fragment of the URE gene in E. coli resulted in the production of a 63-kDa **recombinant protein** that was recognized in an immunoblot by antiserum raised against the Ka URE homolog. This is the first report of a fungal URE gene.

L34 ANSWER 15 OF 18 MEDLINE on STN DUPLICATE 5

ACCESSION NUMBER: 96294782 MEDLINE

DOCUMENT NUMBER: 96294782 PubMed ID: 8698497

TITLE: Molecular cloning and characterization of

Coccidioides immitis antigen 2 cDNA.

AUTHOR: Zhu Y; Yang C; Magee D M; Cox R A
CORPORATE SOURCE: Department of Clinical Investigation, Texas Center

for Infectious Disease, San Antonio 78223, USA.

CONTRACT NUMBER: AI2143 (NIAID)

SOURCE: INFECTION AND IMMUNITY, (1996 Jul) 64 (7) 2695-9.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals OTHER SOURCE: GENBANK-U32518

ENTRY MONTH: 199609

ENTRY DATE: Entered STN: 19960912

Last Updated on STN: 19960912 Entered Medline: 19960904

Previous experiments have provided evidence that AB Coccidioides immitis antigen 2 (Ag2) is a major T-cell-reactive component of mycelia and spherule cell walls. we report the identification and cloning of the cDNA that encodes Ag2 from a lambda ZAP cDNA expression library constructed from spherule-derived RNA. DNA sequence analysis established that the 1,255-bp clone contains a 174-bp 5' untranslated region, a 582-bp open reading frame which encodes for a protein consisting of 194 amino acids, and a 375-bp 3' untranslated region, including a poly(A) tail. The recombinant Ag2 protein has a predicted molecular mass of 19.5 kDa and contains an 18-amino-acid N terminus which has been tentatively identified as a signal peptide. The Ag2 cDNA was ligated into the pGEX-4T-3 vector and expressed in Escherichia coli TG-1 cells as a glutathione S-transferase fusion protein. The recombinant fusion protein showed reactivity with sera from patients with coccidioidomycosis and elicited delayed-type footpad hypersensitivity responses in Coccidioides-immune mice. These results suggest that the Aq2 cDNA can be used for the large-scale production of this immunologically important protein.

L34 ANSWER 16 OF 18 MEDLINE on STN DUPLICATE 6

ACCESSION NUMBER: 96239008 MEDLINE

DOCUMENT NUMBER: 96239008 PubMed ID: 8675298

TITLE: Molecular cloning and characterization of the

Coccidioides immitis complement

fixation/chitinase antigen.

AUTHOR: Yang C; Zhu Y; Magee D M; Cox R A

Department of Clinical Investigation, Texas Center CORPORATE SOURCE:

for Infectious Diseases, San Antonio, 78223, USA.

CONTRACT NUMBER:

AI 12431 (NIAID)

SOURCE: INFECTION AND IMMUNITY, (1996 Jun) 64 (6) 1992-7.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals GENBANK-U33265 OTHER SOURCE:

ENTRY MONTH: 199608

ENTRY DATE: Entered STN: 19960822

> Last Updated on STN: 19960919 Entered Medline: 19960812

AB Detection of anti-Coccidioides complement-fixing (CF) antibody is a valuable diagnostic and prognostic aid in coccidioidomycosis. The CF antibody response is directed against a heat-labile antigen that has chitinase activity, hereafter referred to as the CF/chitinase protein. To identify and clone this immunoreactive enzyme, we constructed a Coccidioides immitis cDNA lambda ZAP expression library from spherule RNA and detected fusion peptides expressing CF epitopes by inmunoscreening. A cDNA clone consisting of 1,623 bp was identified, sequenced, and found to contain a single open reading frame that encodes a protein of 47 kDa with 427 amino acids. Deduced amino acid sequence analyses showed that the cloned CF/chitinase cDNA contains a 35-amino-acid region, beginning at Ser-18 and ending at and ending at Arg-52 which has 92% homology with the reported N-terminal amino acid sequence of authentic CF/chitinase protein. The first 17 amino acids in the deduced sequence of the cloned cDNA are not present on the mature CF/chitinase protein, suggesting that it may be a signal peptide. Expression of the CF/chitinase cDNA insert by using the pGEX-4T-3 vector yields a fusion peptide that bears CF-specific epitopes and shows chitinase activity. CF/chitinase clone will enable large-scale production of the recombinant CF antigen for use in immunoassays and facilitate studies on the role of chitinase in the morphogenesis of

L34 ANSWER 17 OF 18 MEDLINE on STN DUPLICATE 7

ACCESSION NUMBER: 96009757 MEDLINE

PubMed ID: 7558310 DOCUMENT NUMBER: 96009757

Molecular and biochemical characterization of a TITLE:

Coccidioides immitis-specific antigen.

AUTHOR: Pan S; Cole G T

Department of Microbiology, Medical College of Ohio, CORPORATE SOURCE:

Toledo 43699-0008, USA.

AI19149 (NIAID) CONTRACT NUMBER:

INFECTION AND IMMUNITY, (1995 Oct) 63 (10) 3994-4002. Journal code: 0246127. ISSN: 0019-9567. SOURCE:

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

C. immitis.

FILE SEGMENT: Priority Journals

OTHER SOURCE: GENBANK-L36551

ENTRY MONTH: 199510

ENTRY DATE: Entered STN: 19951227

Last Updated on STN: 19951227 Entered Medline: 19951030

AB Results of earlier investigations have indicated that the saprobic phase of Coccidioides immitis produces a heat-stable, 19-kDa antigen with serine proteinase activity which has been suggested to be specific for this pathogenic fungus. In the present study we have determined the N-terminal and partial internal amino acid sequences of the purified, 19-kDa antigen, cloned the gene which encodes this polypeptide, and confirmed that the secreted proteinase is a Coccidioides-specific antigen (CS-Ag). Both the genomic and cDNA sequences are reported and reveal that the csa gene which encodes this antigen has no introns. A 543-bp open reading frame encodes a 181-amino-acid-containing protein with a predicted molecular mass of 19.8 kDa and an isoelectric point of 8.3. The csa gene was localized on chromosome I of three representative C. immitis clinical isolates on the basis of Southern hybridizations. Expression of the csa gene in Escherichia coli using the pET21a plasmid vector yielded a recombinant protein that was recognized in immunoblot assays by antibody raised to the purified 19-kDa CS-Ag. Secretion of the native antigen is suggested to occur by cleavage of a putative 23-residue signal **peptide**. The native CS-Ag showed a low degree of glycosylation. Analysis of the carbohydrate composition of the CS-Ag revealed xylose, mannose, galactose, and glucose. However, the purified antigen showed no affinity for concanavalin A. A PCR method with specificity and high sensitivity for detection of C. immitis genomic DNA, using a pair of synthetic oligonucleotide primers whose sequences were based on that of the csa gene, was developed. A 520-bp product was amplified only when C. immitis genomic DNA was used as the template. The lower limits of DNA detection using this PCR method were 1 pg of C. immitis genomic DNA by ethidium bromide staining and 100 fg after Southern hybridization. The csa gene-based PCR method for detection of C. immitis DNA is useful for culture identification and may have clinical applications for the diagnosis of coccidioidal infections.

L34 ANSWER 18 OF 18 MEDLINE ON STN ACCESSION NUMBER: 94129182 MEDLINE

DOCUMENT NUMBER: 94129182 PubMed ID: 8298279

TITLE: Identification of antigens of **Coccidioides** immitis which stimulated immune T lymphocytes.

AUTHOR: Cole G T; Kirkland T N

CORPORATE SOURCE: Department of Botany, University of Texas, Austin

78713.

CONTRACT NUMBER: AI19149 (NIAID)

SOURCE: ARCHIVES OF MEDICAL RESEARCH, (1993 Autumn) 24 (3)

281-91.

Journal code: 9312706. ISSN: 0188-4409.

PUB. COUNTRY: Mexico

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199403

ENTRY DATE: Entered STN: 19940318

Last Updated on STN: 19940318 Entered Medline: 19940308

AB T-cell mediated immune response to coccidioidomycosis has been shown to be the principal mechanism of resistance to this respiratory fungal disease in experimental animals. In this study, a Coccidioides immitis antigen-specific murine T-cell line was used to identify macromolecules capable of eliciting an immune mouse T-cell proliferative response. The murine T-cell line was selected on the basis of its strong positive response to a soluble conidial wall fraction (SCWF), which had previously been shown to be reactive in humoral and cellular immunoassays. An antigen-specific T-cell line rather than T-cell clones was used to identify multiple antigens. The T-cell immunoblot method was employed first to identify immunoreactive sub-fractions of the SCWF, and then to identify T-cell fusion proteins (FPs) obtained from a cDNA expression library constructed in lambda gtll. The library was screened with anti-SCWF. The nucleotide sequence of a 0.2 kilobase cDNA insert encoding a FP which elicited vigorous T-cell response was determined. A construct of this insert was subcloned into the pET expression vector system and 6.5-kilodalton (kDa) recombinant protein (RP) expressed in Escherichia coli was isolated. The RP and FP were shown to be homologous on the basis of identify of their amino acid sequences. Antibody raised in guinea pigs against the RP recognized a 59-kDa native protein of the mycelial culture filtrate produced by three separate strains of C. immitis, and reacted with the cell wall of arthroconidia as detected by immunofluorescence microscopy. In this study we have identified and partly characterized a potentially important T-cell stimulating antigen of C. immitis.

```
(FILE 'MEDLINE' ENTERED AT 09:35:53 ON 04 DEC 2003)

L35 720 SEA FILE=MEDLINE ABB=ON PLU=ON COCCIDIOIDES/CT

L36 120410 SEA FILE=MEDLINE ABB=ON PLU=ON PROTEINS/CT

L37 86 SEA FILE=MEDLINE ABB=ON PLU=ON POLYPROTEINS/CT

L38 73063 SEA FILE=MEDLINE ABB=ON PLU=ON PEPTIDES/CT

L39 7 SEA FILE=MEDLINE ABB=ON PLU=ON L35 AND (L36 OR L37 OR L38)
```

- L39 ANSWER 1 OF 7 MEDLINE on STN
- AN 2002322678 MEDLINE
- TI Localization within a proline-rich antigen (Ag2/PRA) of protective antigenicity against infection with Coccidioides immitis in mice.
- AU Peng Tao; Shubitz Lisa; Simons Julie; Perrill Robert; Orsborn Kris I; Galgiani John N
- SO INFECTION AND IMMUNITY, (2002 Jul) 70 (7) 3330-5. Journal code: 0246127. ISSN: 0019-9567.
- AB Subunits of a proline-rich coccidioidal antigen (Ag2/PRA) of Coccidioides immitis were analyzed by comparison as vaccines in mice. The optimal dose of plasmid vaccine encoding full-length Ag2/PRA was determined to be between 10 and 100 microg. Mice vaccinated with plasmids encoding amino acids (aa) 1 to 106 were as protective as full-length Ag2/PRA (aa 1 to 194). The subunit from aa 27 to 106 was significantly but less protective. Plasmids encoding aa 90 to 151 or aa 90 to 194 were not protective. Analogous results were obtained with recombinant vaccines of the same amino acid sequences. In addition, mixtures of aa 90 to 194 with either aa 1 to 106 or aa 27 to 106 did not enhance protection compared to the active single-recombinant subunits alone. Humoral

response of total immunoglobulin G (IgG) and subclasses IgG1 and IgG2a were detectable in subunit vaccinations but at significantly (100-fold) lower concentrations than after vaccination with plasmids encoding full-length Ag2/PRA. Since virtually all protection by vaccination with full-length Ag2/PRA can be accounted for in the first half of the protein (aa 1 to 106), this subunit could make a multicomponent vaccine more feasible by reducing the quantity of protein per dose and the possibility of an untoward reactions to a foreign protein.

- L39 ANSWER 2 OF 7 MEDLINE on STN
- AN 1999094977 MEDLINE
- TI Proline-rich vaccine candidate antigen of Coccidioides immitis: conservation among isolates and differential expression with spherule maturation.
- AU Peng T; Orsborn K I; Orbach M J; Galgiani J N
- SO JOURNAL OF INFECTIOUS DISEASES, (1999 Feb) 179 (2) 518-21. Journal code: 0413675. ISSN: 0022-1899.
- A proline rich antigen (PRA), which protects mice against AB Coccidioides immitis, has been analyzed for differential expression and variation among isolates. Northern blots of RNA from different stages of growth were probed with previously cloned cDNA and showed that mRNA for PRA increased as spherules transformed and matured from mycelia. This pattern corresponds to the relative potency of whole cell vaccines from similar preparations. The PRA gene was then cloned from a genomic library of the Silveira strain of C. immitis and its sequence analyzed. Eight other coccidioidal isolates, selected for diversity in geographic origin and resulting clinical disease, demonstrated heterogeneity in Southern blots and in sequences of polymerase chain reaction products. Silveira differed from other California isolates at 33 of 555 bases, whereas it differed from non-California isolates by <=2 bases. Only one of these substitutions affected protein sequence. Thus, tests or vaccines based on this gene are likely to cover most isolates.
- L39 ANSWER 3 OF 7 MEDLINE on STN
- AN 96144702 MEDLINE
- TI Cloning and sequence analysis of the cDNA for a protein from Coccidioides immitis with immunogenic potential.
- AU Dugger K O; Villareal K M; Ngyuen A; Zimmermann C R; Law J H; Galgiani J N
- SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1996 Jan 17) 218 (2) 485-9.

 Journal code: 0372516. ISSN: 0006-291X.
- AB We have cloned and sequenced the cDNA encoding an immunoreactive protein from the pathogenic fungus Coccidioides immitis which stimulates human T cells and has been associated with protective vaccines in mice. The transcript contained an open reading frame encoding 194 amino acids with a calculated molecular weight of 19.5 kDa, a 151 base 5' untranslated region (UTR), and a 468 base 3'UTR. A four member repeat motif, usually thr-ala-glu-pro, exists for amino acids 98 through 141. Deduced amino acid sequence derived from the cDNA was identical with previously determined internal amino acid sequence from the native protein, and goat antiserum raised against the purified fungal protein reacted with an inducible fusion protein translated from this cDNA. Using this cDNA to produce recombinant protein will allow direct testing of its role in human immunity to coccidioidomycosis and may lead to new diagnostic

tests.

- L39 ANSWER 4 OF 7 MEDLINE on STN
- AN 90383461 MEDLINE
- TI Activity of cilofungin against Coccidioides immitis: differential in vitro effects on mycelia and spherules correlated with in vivo studies.
- AU Galgiani J N; Sun S H; Clemons K V; Stevens D A
- SO JOURNAL OF INFECTIOUS DISEASES, (1990 Oct) 162 (4) 944-8. Journal code: 0413675. ISSN: 0022-1899.
- AB Cilofungin, a new antifungal drug, was found to inhibit mycelial growth of Coccidioides immitis. Light and electron microscopic observations indicated delay in development of the outer hyphal wall. Cilofungin also blocked incorporation of the chitin substrate, N-acetylglucosamine, into mycelia. However, when C. immitis was grown under conditions that induced spherule development, drug effects were dramatically decreased. Furthermore, efficacy of cilofungin in treatment of murine coccidioidomycosis could not be demonstrated. These studies indicate that glucan-synthase inhibitors have activity against C. immitis, and other compounds with different pharmacologic properties or in combination with other antifungal drugs may exploit this biologic effect.
- L39 ANSWER 5 OF 7 MEDLINE on STN
- AN 75150364 MEDLINE
- TI Immunocompetence and prognosis in patients with gynecologic cancer.
- AU Nalick R H; Disaia P J; Rea T H; Morrow C P
- SO GYNECOLOGIC ONCOLOGY, (1974 Apr) 2 (1) 81-92. Journal code: 0365304. ISSN: 0090-8258.
- L39 ANSWER 6 OF 7 MEDLINE on STN
- AN 72041293 MEDLINE
- TI Fractionation and composition studies of skin test-active components of sensitins from Coccidioides immitis.
- AU Anderson K L; Wheat R W; Conant N F
- SO APPLIED MICROBIOLOGY, (1971 Sep) 22 (3) 294-9. Journal code: 7605802. ISSN: 0003-6919.
- L39 ANSWER 7 OF 7 MEDLINE on STN
- AN 68239308 MEDLINE
- TI Sarcoidosis. II. A clinical evaluation of the alteration in delayed hypersensitivity.
- AU Lordon R E; Young R L; Shapiro S S; Smith R E; Weg J G
- SO AMERICAN REVIEW OF RESPIRATORY DISEASE, (1968 Jun) 97 (6) 1009-16. Journal code: 0370523. ISSN: 0003-0805.
 - (FILE 'HCAPLUS' ENTERED AT 09:41:53 ON 04 DEC 2003)
- L52 208 SEA FILE=HCAPLUS ABB=ON PLU=ON C IMMITIS
- L53 74 SEA FILE=HCAPLUS ABB=ON PLU=ON L52 AND (PROTEIN OR POLYPEPTIDE OR PROTEIN OR PEPTIDE)
- L54 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L53 AND VECTOR
- L55 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L54 AND RECOMBIN?
- L56 0 L55 NOT L32

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,

JICST-EPLUS, JAPIO' ENTERED AT 09:43:13 ON 04 DEC 2003) L57 22 S L55 0 S L57 NOT L33 L58 (FILE 'USPATFULL' ENTERED AT 09:44:23 ON 04 DEC 2003) L59 635 SEA FILE-USPATFULL ABB-ON PLU-ON (COCCIDIOD? OR C) (W) IMMITIS OR COCCIDIOIDOMYC? L60 4 SEA FILE-USPATFULL ABB-ON PLU-ON L59(10A) (PROTEIN OR PEPTIDE OR POLYPEPTIDE OR POLYPROTEIN) L59 635 SEA FILE=USPATFULL ABB=ON PLU=ON (COCCIDIOD? OR C) (W) IMMITIS OR COCCIDIOIDOMYC? L65 246 SEA FILE-USPATFULL ABB-ON PLU-ON L59(S) (PROTEIN OR PEPTIDE OR POLYPEPTIDE OR POLYPROTEIN) L66 2 SEA FILE=USPATFULL ABB=ON PLU=ON L65(S)(VECTOR(3A)RECOM BIN?) 6 L60 OR L66 L67 L67 ANSWER 1 OF 6 USPATFULL on STN ACCESSION NUMBER: 2003:311860 USPATFULL TITLE: Glucanosyl transferase-1 protein useful for immunization against Coccidioides spp. INVENTOR(S): Cole, Garry T., Toledo, OH, UNITED STATES Delgado, Nelson, Delran, NJ, UNITED STATES Yu, Jieh-Juen, Toledo, OH, UNITED STATES Xue, Jianmin, Toledo, OH, UNITED STATES NUMBER KIND DATE US 2003219455 A1 20031127 US 2003-417997 A1 20030416 (10) PATENT INFORMATION: APPLICATION INFO.: NUMBER DATE PRIORITY INFORMATION: US 2002-374152P 20020422 (60) DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION LEGAL REPRESENTATIVE: Michael R. Ward, Morrison & Foerster LLP, 425 Market Street, San Francisco, CA, 94105-2482 NUMBER OF CLAIMS: 52 EXEMPLARY CLAIM: 1 NUMBER OF DRAWINGS: 4 Drawing Page(s) LINE COUNT: 2165 AB The present invention provides compositions of $1,3-\beta$ -glucanosyltransferase (Gel-1) antigens and polynucleotides encoding the Gel-1 antigens, which Gel-1 antigens are useful for generating an immunological response in an individual and in therapeutic and diagnostic applications of infections due to pathogenic Coccidioides spp. fungi, such as C. immitis or C. posadasii. INCL INCLM: 424/190.100 INCLS: 435/069.300; 435/070.210; 435/252.300; 435/320.100;

Searcher: Shears 308-4994

530/350.000; 536/023.700

NCL NCLM: 424/190.100

NCLS: 435/069.300; 435/070.210; 435/252.300; 435/320.100;

530/350.000; 536/023.700

STATES

STATES

L67 ANSWER 2 OF 6 USPATFULL on STN

ACCESSION NUMBER:

2003:258639 USPATFULL 207 human secreted proteins

TITLE: INVENTOR(S):

Ni, Jian, Germantown, MD, UNITED STATES

Ebner, Reinhard, Gaithersburg, MD, UNITED STATES LaFleur, David W., Washington, DC, UNITED STATES Moore, Paul A., Germantown, MD, UNITED STATES Olsen, Henrik S., Gaithersburg, MD, UNITED STATES Rosen, Craig A., Laytonsville, MD, UNITED STATES Ruben, Steven M., Olney, MD, UNITED STATES Soppet, Daniel R., Centreville, VA, UNITED STATES Young, Paul E., Gaithersburg, MD, UNITED STATES Shi, Yanggu, Gaithersburg, MD, UNITED STATES Florence, Kimberly A., Rockville, MD, UNITED

Wei, Ying-Fei, Berkeley, CA, UNITED STATES Florence, Charles, Rockville, MD, UNITED STATES Hu, Jing-Shan, Mountain View, CA, UNITED STATES Li, Yi, Sunnyvale, CA, UNITED STATES Kyaw, Hla, Frederick, MD, UNITED STATES Fischer, Carrie L., Burke, VA, UNITED STATES Ferrie, Ann M., Painted Post, NY, UNITED STATES Fan, Ping, Potomac, MD, UNITED STATES Feng, Ping, Gaithersburg, MD, UNITED STATES Endress, Gregory A., Florence, MA, UNITED STATES Dillon, Patrick J., Carlsbad, CA, UNITED STATES Carter, Kenneth C., North Potomac, MD, UNITED

Brewer, Laurie A., St. Paul, MN, UNITED STATES Yu, Guo-Liang, Berkeley, CA, UNITED STATES Zeng, Zhizhen, Lansdale, PA, UNITED STATES Greene, John M., Gaithersburg, MD, UNITED STATES

KIND DATE

PATENT INFORMATION: APPLICATION INFO.: RELATED APPLN. INFO.:

US 2003181692 A1 US 2001-933767 A1 20030925 20010822

Continuation-in-part of Ser. No. WO 2001-US5614,

filed on 21 Feb 2001, PENDING

Continuation-in-part of Ser. No. US 1998-205258,

filed on 4 Dec 1998, PENDING

NUMBER

		NUMBER	DATE	
PRIORITY INFORMA	ATION: US	2000-184836P	20000224	(60)
	US	2000-193170P	20000329	(60)
	US	1997-48885P	19970606	(60)
•	US	1997-49375P	19970606	(60)
	US	1997-48881P	19970606	(60)
	UŞ	1997-48880P	19970606	(60)
	US	1997-48896P	19970606	(60)
	US	1997-49020P	19970606	(60)
	US	1997-48876P	19970606	(60)
	US	1997-48895P	19970606	(60)

\$	1997 - 48884P 1997 - 48971P 1997 - 48964P 1997 - 48893P 1997 - 48893P 1997 - 48900P 1997 - 48901P 1997 - 48915P 1997 - 48970P 1997 - 48970P 1997 - 48973P 1997 - 48973P 1997 - 48974P 1997 - 48875P 1997 - 48875P 1997 - 48875P 1997 - 48875P 1997 - 48874P 1997 - 48874P 1997 - 48874P 1997 - 48878P 1997 - 48878P 1997 - 48878P 1997 - 57668P 1997 - 57668P 1997 - 57667P 1997 - 57664P	19970606 (60) 19970905 (60) 19970905 (60)
US	1997-57765P	19970905 (60)
US	1997-57762P	19970905 (60)
US	1997-57775P	19970905 (60)

US 1997-57776P 19970905 (60) US 1997-57778P 19970905 (60) US 1997-57629P 19970905 (60) US 1997-57628P 19970905 (60) US 1997-57777P 19970905 (60) US 1997-57634P 19970905 (60) US 1997-70923P 19971218 (60) 19980715 (60) US 1998-92921P US 1998-94657P 19980730 (60) US 1997-70923P 19971218 (60) US 1998-92921P 19980715 (60) US 1998-94657P 19980730 (60) Utility APPLICATION ROCKVILLE, MD, 20850

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE,

NUMBER OF CLAIMS: 23 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 32746

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel human secreted proteins and isolated nucleic acids containing the coding regions of the genes encoding such proteins. Also provided are vectors, host cells, antibodies, and recombinant methods for producing human secreted proteins. The invention further relates to diagnostic and therapeutic methods useful for diagnosing and treating diseases, disorders, and/or conditions related to these novel human secreted proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 536/023.100

INCLS: 530/350.000; 435/325.000; 435/183.000; 435/069.100;

435/320.100

NCL NCLM: 536/023.100

NCLS: 530/350.000; 435/325.000; 435/183.000; 435/069.100;

435/320.100

L67 ANSWER 3 OF 6 USPATFULL on STN

ACCESSION NUMBER: 2003:127198 USPATFULL

TITLE: Death associated kinase containing ankyr in

repeats (DAKAR) and methods of use

INVENTOR(S): Bird, Timothy A., Bainbridge Island, WA, UNITED

STATES

Holland, Pamela M., Seattle, WA, UNITED STATES Peschon, Jacques J., Seattle, WA, UNITED STATES Virca, George D., Bellevue, WA, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION: APPLICATION INFO.:	 2003087411 2002-164080		20030508 20020604	(10)

	NUMBER								DA'			ΤE											
_	_	_	_	-		-		-	_	_	_	-	_	_	_	_	_						_

PRIORITY INFORMATION: US 2001-295959P 20010604 (60) US 2001-334362P 20011129 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: IMMUNEX CORPORATION, LAW DEPARTMENT, 51

UNIVERSITY STREET, SEATTLE, WA, 98101

NUMBER OF CLAIMS: 16 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 4 Drawing Page(s)

LINE COUNT: 5574

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to DAKAR, a new member of the serine/threonine kinase family, methods of making such polypeptides, and to methods of using them to treat conditions associated with apoptosis and epithelial proliferation and differentiation, as well as methods to identify compounds that alter DAKAR-associated cellular activities.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 435/194.000

INCLS: 435/069.100; 435/320.100; 435/325.000; 536/023.200

NCL NCLM: 435/194.000

PATENT INFORMATION:

APPLICATION INFO.:

NCLS: 435/069.100; 435/320.100; 435/325.000; 536/023.200

L67 ANSWER 4 OF 6 USPATFULL on STN

ACCESSION NUMBER: 2003:38356 USPATFULL

TITLE: 125 human secreted proteins

INVENTOR(S): Rosen, Craig A., Laytonsville, MD, UNITED STATES

Feng, Ping, Gaithersburg, MD, UNITED STATES Ruben, Steven M., Olney, MD, UNITED STATES

Ebner, Reinhard, Gaithersburg, MD, UNITED STATES Olsen, Henrik S., Gaithersburg, MD, UNITED STATES

Ni, Jian, Germantown, MD, UNITED STATES Wei, Ying-Fei, Berkeley, CA, UNITED STATES

Soppet, Daniel R., Centreville, VA, UNITED STATES

Moore, Paul A., Germantown, MD, UNITED STATES

Kyaw, Hla, Frederick, MD, UNITED STATES LaFleur, David W., Washington, DC, UNITED STATES

Shi, Yanggu, Gaithersburg, MD, UNITED STATES
Janat, Fouad, Westerly, RI, UNITED STATES

Endress, Gregory A., Florence, MA, UNITED STATES Carter, Kenneth C., North Potomac, MD, UNITED

STATES

Birse, Charles E., North Potomac, MD, UNITED

STATES

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2001-818683, filed on 28 Mar 2001, PENDING Continuation of Ser. No. US 1999-305736, filed on 5 May 1999, PENDING Continuation-in-part of Ser. No. WO

PENDING Continuation-in-part of Ser. No. WC 1998-US23435, filed on 4 Nov 1998, UNKNOWN

US 1997-64983P US 1997-64900P US 1997-64988P US 1997-64987P US 1997-64984P US 1997-64985P US 1997-66094P US 1997-660094P US 1997-66099P US 1997-66095P US 1997-66090P Utility 19971107 (60) 19971107 (60) 19971107 (60) 19971107 (60) 19971107 (60) 19971107 (60) 19971107 (60) 19971117 (60) 19971117 (60) 19971117 (60) 19971117 (60) 19971117 (60)

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE,

ROCKVILLE, MD, 20850

NUMBER OF CLAIMS: 23 EXEMPLARY CLAIM:

NUMBER OF DRAWINGS: 3 Drawing Page(s)

LINE COUNT: 36277

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel human secreted proteins and isolated nucleic acids containing the coding regions of the genes encoding such proteins. Also provided are vectors, host cells, antibodies, and recombinant methods for producing human secreted proteins. The invention further relates to diagnostic and therapeutic methods useful for diagnosing and treating diseases, disorders, and/or conditions related to these novel human secreted proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCLM: 536/023.200 INCL

INCLS: 435/069.100; 435/325.000; 435/320.100; 435/183.000

NCL NCLM: 536/023.200

NCLS: 435/069.100; 435/325.000; 435/320.100; 435/183.000

L67 ANSWER 5 OF 6 USPATFULL on STN

ACCESSION NUMBER: 2002:198286 USPATFULL

TITLE: rSOWqp58 protein and its use as an antigen INVENTOR(S): Hung, Chiung-Yu, Toledo, OH, UNITED STATES Cole, Garry T., Toledo, OH, UNITED STATES

PATENT ASSIGNEE(S): Medical College of Ohio (U.S. corporation)

NUMBER KIND DATE PATENT INFORMATION: US 2002106380 A1 20020808 US 2001-850677 A1 20010507 (9) APPLICATION INFO.:

> NUMBER DATE -----

PRIORITY INFORMATION: US 2000-202754P 20000508 (60)

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: EMCH, SCHAFFER, SCHAUB & PORCELLO CO, P O BOX

916, ONE SEAGATE SUITE 1980, TOLEDO, OH, 43697

NUMBER OF CLAIMS: 32 EXEMPLARY CLAIM:

NUMBER OF DRAWINGS: 6 Drawing Page(s)

LINE COUNT: 1476

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides bacterial plasymids and recombinant SOW proteins that are useful as antigens for serodiagnosis of

coccidiomycosis.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 424/191.100

INCLS: 435/007.220; 530/395.000

NCL NCLM: 424/191.100

NCLS: 435/007.220; 530/395.000

L67 ANSWER 6 OF 6 USPATFULL on STN

ACCESSION NUMBER: 2001:208993 USPATFULL

TITLE: Candida albicans gene (CSA1) encoding a mycelial

surface antigen, and uses thereof

INVENTOR(S): Bourbonnais, Yves, Cap-Rouge, Canada

Deslauriers, Noella, St-Ferreol-les-Neiges,

Canada

PATENT ASSIGNEE(S): Universite Laval, Quebec, Canada (non-U.S.

corporation)

NUMBER DATE

PRIORITY INFORMATION: CA 1998-2237134 19980710

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED

PRIMARY EXAMINER: Marschel, Ardin H. LEGAL REPRESENTATIVE: Nixon Peabody LLP

NUMBER OF CLAIMS: 2 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 19 Drawing Figure(s); 11 Drawing Page(s)

LINE COUNT: 810

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a Candida albicans gene (CSA1) encoding a surface protein. The present invention also relates to the surface protein and methods for using the protein or the gene for the detection, prophylaxis or treatment of candidal infection. The protein encoded is a surface antigen of Candida albicans yeast and mycelial forms, respectively. The mycelial surface antigen was shown to be present predominantly in the terminal third of the hyphal structures. CSA1 is a gene coding for a unique surface antigen.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

INCL INCLM: 536/023.100

INCLS: 435/006.000; 435/254.220; 536/023.740; 536/024.320

NCL NCLM: 536/023.100

NCLS: 435/006.000; 435/254.220; 536/023.740; 536/024.320

(FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, USPATFULL' ENTERED AT 09:47:30 ON 04 DEC 2003)
L68 10292 S "COX R"?/AU

-Authoris L69 1193 S "MAGEE D"?/AU L70 5719 S "JIANG C"?/AU L71 21 S L68 AND L69 AND L70 97 S L68 AND (L69 OR L70) L72 L73 21 S L69 AND L70 L75 93 SEA ABB=ON PLU=ON (L71 OR L72 OR L73 OR L68 OR L69 OR L70) AND (L53 OR L30) L76 25 DUP REM L75 (68 DUPLICATES REMOVED) L76 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 1 ACCESSION NUMBER: 2003:790176 HCAPLUS TITLE: Identification of a protective antigen of Coccidioides immitis by expression library immunization Ivey, F. Douglas; Magee, D. Mitchell; AUTHOR(S): Woitaske, Melanie D.; Johnston, Stephen Albert; Cox. Rebecca A. CORPORATE SOURCE: Department of Microbiology and Immunology, University of Texas Health Science Center at San Antonio, San Antonio, TX, 78229, USA Vaccine (2003), 21(27-30), 4359-4367 SOURCE: CODEN: VACCDE; ISSN: 0264-410X Elsevier Science Ltd. PUBLISHER: Journal DOCUMENT TYPE: LANGUAGE: English Coccidioides immitis is a fungal pathogen of humans and is classified as a Select Agent. We have identified a new potential vaccine candidate for this pathogen using cDNA expression library immunization (ELI). A C. immitis spherule-phase cDNA library containing 800-1000 genes was divided into 10 pools and each was tested for its protective capacity in BALB/c mice against i.p. challenge with 2500 arthroconidia of this dimorphic fungus. The most protective pool, designated Pool 7, was fractionated into five sublibraries, each containing 60 genes, and of these, only Pool 7-3 induced a significant level of protection in mice. Fractionation of Pool 7-3 into six sublibraries, each with 10 genes, yielded a protective fraction, designated Pool 7-3-5. Subsequent fraction of the latter pool into 10 sublibraries, each with one clone, yielded a clone designated 7-3-5-5 that was highly protective. Clone 7-3-5-5 was sequenced and found to contain a 672 bp ORF encoding a 224 amino acid protein having a 19 amino acid signal sequence on the N-terminus and a 15 amino acid C-terminal GPI anchor site. 7-3-5-5 clone, designated ELI-Antigen 1 (ELI-Aq1), showed partial homol. with a hypothetical protein from Neurospora crassa. This is the first study to identify a protective antigen from a fungus using ELI, and it is also the first report in which sequential fractionation of an expression library successfully identified a single protective gene. L76 ANSWER 2 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 2 2003:721561 HCAPLUS ACCESSION NUMBER: DOCUMENT NUMBER: 139:346526 Transfection of murine dendritic cell line (JAWS TITLE: II) by a nonviral transfection reagent

Searcher: Shears 308-4994

Awasthi, Shanjana; Cox, Rebecca A.

Dept. of Pathology, University of Texas Health

AUTHOR(S):

CORPORATE SOURCE:

Science Center at San Antonio, San Antonio, TX,

USA

SOURCE: BioTechniques (2003), 35(3), 600-602,604

CODEN: BTNQDO; ISSN: 0736-6205

PUBLISHER: Eaton Publishing Co.

DOCUMENT TYPE:

Journal

LANGUAGE: English Dendritic cells are the most potent antigen-presenting cells that

initiate and modulate the host immune system. Based on their immunostimulatory activity, a variety of strategies have been developed to use dendritic cells as vaccines and immunotherapeutic agents against infection and cancer. Genetically modified dendritic cells are useful for immunotherapeutic purposes because of their sustained activity in vivo. However, transfection of dendritic cells with plasmid DNA has been very difficult. While the viral transfection is associated with nonspecific activation of dendritic cells, commonly used nonviral transfection reagents have a low efficiency of transfection. Here we describe an improved, simple, less time-consuming transfection protocol using the nonviral nonliposomal lipid polymer, TransIT-TKO transfection reagent, for transfecting murine dendritic cells (JAWS II) with the gene that encodes Coccidioides immitis antigen 2 (Ag2). The JAWS II cells were cotransfected with pHYG-enhanced green fluorescent protein (EGFP) and pVR1012-C immitis Ag2

plasmid DNAs using TransIT-TKO reagent. We reproducibly obtained 30%-50% transfection efficiency. The transfected cells maintained their immature phenotype and were functionally active. In addition, the flexibility of this agent for expressing multiple antigens (GFP and C. immitis Ag2) offers an advantage of

delivering multiple immunogens.

REFERENCE COUNT:

14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L76 ANSWER 3 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 3

ACCESSION NUMBER:

2002:489694 HCAPLUS

DOCUMENT NUMBER: 137:92359

TITLE:

Role of signal sequence in vaccine-induced

protection against experimental

coccidioidomycosis

AUTHOR(S):

Jiang, Chengyong; Magee, D.

Mitchell; Ivey, F. Douglas; Cox,

Rebecca A.

CORPORATE SOURCE:

Department of Microbiology, University of Texas

Health Science Center at San Antonio, San

Antonio, TX, 78229, USA

SOURCE:

Infection and Immunity (2002), 70(7), 3539-3545

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER:

American Society for Microbiology

DOCUMENT TYPE:

Journal

English LANGUAGE:

The vaccine efficacy of the gene sequence encoding the signal peptide of the antigen known as antigen 2 or proline-rich antigen (Ag2/PRA), an immunodominant antigen present in the cell wall of the fungal pathogen Coccidioides immitis, was investigated in a murine model of coccidioidomycosis. Expression plasmids for Ag2/PRA(1-18) DNA (signal sequence), Ag2/PRA(19-194) DNA (lacking the signal sequence), and

Ag2/PRA(1-194) DNA (full length) were inserted in the pVR1012 vector, and the constructs were used to vaccinate the highly susceptible BALB/c mouse strain. Immunization with the signal gene sequence significantly reduced the fungal burden in the lungs and spleens of mice 12 days after i.p. challenge with a LD of 2500 C. immitis arthroconidia, to a level comparable to the protection induced in mice immunized with the full-length Ag2/PRA(1-194) DNA. The Ag2/PRA(19-194) gene protected mice but to a significantly lower level than the signal sequence or the full-length Ag2 gene. The immunizing capacity of Ag2/PRA(1-18) was not attributable to a nonspecific immunostimulatory effect of DNA, as evidenced by the fact that mice immunized with a frameshift mutation of Ag2/PRA(1-18) were not protected against challenge. Furthermore, a synthetic peptide corresponding to the translated sequence of Ag2/PRA(1-18) DNA protected mice, albeit at a lower level than the Ag2/PRA(1-18) DNA vaccine. The protection induced with the signal gene vaccine correlated with the production of gamma interferon when splenocytes from Ag2/PRA(1-18)-immunized mice were stimulated with recombinant full-length Ag2 and was not associated with the production of anti-Coccidioides IgG antibody. is the first study to establish that a signal peptide sequence alone, administered as a gene vaccine or synthetic peptide, can induce protective immunity against a microbial pathogen.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L76 ANSWER 4 OF 25 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on

STN

ACCESSION NUMBER: 2002:597076 BIOSIS DOCUMENT NUMBER: PREV200200597076

TITLE: Induction of gene expression in Coccidioides immitis during growth inside murine macrophages.

Magee, D. M. [Reprint author]; Woitaske, M. AUTHOR(S):

D. [Reprint author]; Wickes, B. L. [Reprint author];

Cox, R. A. [Reprint author]

CORPORATE SOURCE: University of Texas Health Science Center at San

Antonio, San Antonio, TX, USA

Abstracts of the General Meeting of the American SOURCE:

Society for Microbiology, (2002) Vol. 102, pp. 205.

print.

Meeting Info.: 102nd General Meeting of the American Society for Microbiology. Salt Lake City, UT, USA. May 19-23, 2002. American Society for Microbiology.

ISSN: 1060-2011.

DOCUMENT TYPE:

Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English

ENTRY DATE: Entered STN: 20 Nov 2002

Last Updated on STN: 20 Nov 2002

AR Coccidioides immitis is a dimorphic fungus of the American southwest growing in the soil as mycelia and within the host as the spherule/endospore parasitic phase. We hypothesized that genes that are upregulated when C. immitis grows in vivo might be associated with virulence of this primary fungal pathogen. To identify potential virulence-associated genes, we utilized differential display, reverse transcriptase, polymerase chain

reaction (DD-RT-PCR) to assess induction of gene expression within C. immitis spherules during intracellular parasitism of murine macrophages. Macrophage monolayers were infected with C. immitis arthroconidia and, after approximately 36 hours of culture, RNA was obtained from the developing macrophage-derived spherules and compared to RNA from spherules grown in tissue culture medium alone. Differential display analyses identified 11 gene fragments specific for the macrophage-derived spherules. These products were cloned into a TA vector, sequenced, and analyzed for homology with the Genbank databases. One clone had significant homology to a Magnaporthe grisea appressorium stage cDNA library gene and Saccharomyces cerevisae glycogen phosphorylase. The complete cDNA clone was recovered using 5' and 3' RACE and using this as a probe, we obtained and sequenced a genomic clone for C. immitis glycogen phosphorylase. The gene had seven predicted introns and a translation of the coding region indicated that the protein would contain 881 amino acids with a molecular weight of 100.6 kDa and a pI of 5.75. Northern analysis confirmed that glycogen phosphorylase message was differentially expressed by spherules in parasitized macrophages. Differential display may provide a tool to delineate virulence-associated genes of C. immitis or help define metabolic targets for rationally designed antifungal drugs.

L76 ANSWER 5 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2000:208899 HCAPLUS

DOCUMENT NUMBER: 132:247984

TITLE: The x-ray structure of a chitinase from the

pathogenic fungus Coccidioides immitis

AUTHOR(S): Hollis, Thomas; Monzingo, Arthur F.; Bortone,

Kara; Ernst, Stephen; Cox, Rebecca;

Robertus, Jon D.

CORPORATE SOURCE: Institute of Cellular and Molecular Biology,

Department of Chemistry and Biochemistry, University of Texas, Austin, TX, 78712, USA

SOURCE: Protein Science (2000), 9(3), 544-551

CODEN: PRCIEI; ISSN: 0961-8368

PUBLISHER: Cambridge University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The x-ray crystal structure of chitinase from ${\bf C}$.

immitis was solved to 2.2 Å resolution. Like other members of the class 18 hydrolase family, this 427-residue protein was an 8-stranded β/α -barrel. Although lacking an N-terminal chitin-anchoring domain, the enzyme closely resembled chitinase from Serratia marcescens. Among the conserved features

were 3 cis **peptide** bonds, all involving conserved active site residues. The active site was formed from conserved residues such as Trp-47, Trp-131, Trp-315, Trp-378, Tyr-239, Tyr-293, Arg-52 and Arg-295. Glu-171 was the catalytic acid in the hydrolytic mechanism; when it was mutated to Gln, enzyme activity was abolished. Allosamidin is a substrate analog that strongly inhibits the class 18 enzymes. Its binding to the chitinase, hevamine, was

previously observed and conserved structural features of the 2 enzymes were used to predict the inhibitor's binding to the fungal enzyme.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L76 ANSWER 6 OF 25 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS

RESERVED. on STN

ACCESSION NUMBER: 1999185649 EMBASE

TITLE: Construction of a single-chain interleukin-12-

expressing retroviral vector and its application in

cytokine gene therapy against experimental

coccidioidomycosis.

AUTHOR: Jiang C.; Magee D.M.; Cox

R.A.

CORPORATE SOURCE: C. Jiang, Dept. of Clinical Investigation, Texas

Center for Infectious Disease, 2303 SE Military Dr.,

San Antonio, TX 78223, United States.

chengyong.jiang@tdh.state.tx.us

SOURCE: Infection and Immunity, (1999) 67/6 (2996-3001).

Refs: 45

ISSN: 0019-9567 CODEN: INFIBR

COUNTRY: United States DOCUMENT TYPE: Journal; Article 004 Microbiology FILE SEGMENT:

026 Immunology, Serology and Transplantation

LANGUAGE: English SUMMARY LANGUAGE: English

T-cell-mediated immunity is an important determinant in protection

against primary infection with Coccidioides immitis, a dimorphic fungal pathogen that causes the disease

coccidioidomycosis. To determine if interleukin-12 (IL-12) gene therapy could potentiate host response against C.

immitis, we constructed a single-chain cDNA encoding the p40 and p35 subunits linked by a polylinker and, using a retroviral vector, transfected J774 macrophages with the construct. The

transduced J774 cells expressed IL-12 in vitro, with a mean concentration of 28,440 pg from 106 cells in 48 h as measured by an IL-12 (p75)-specific enzyme-linked immunosorbent assay. The secreted IL-12 was biologically active, as judged by its ability to induce the production of gamma interferon (IFN- γ) by spleen cells

from BALB/c mice. Treatment of the highly susceptible BALB/c mouse

strain with the IL-12- transduced J774 cells inhibited C.

immitis growth in tissues from mice challenged by a pulmonary route, as evidenced by 1.37-, 2.59-, and 1.22-log

reductions in the number of CFU in the lungs, spleens, and livers,

respectively, compared to the fungal load in mice given

vector-transduced J774 cells. The protective effect of IL-12 gene therapy was accompanied by increased levels of IFN- γ in the

lungs and sera of mice treated with IL-12- transduced J774 cells and

the constitutive production of IFN- γ by their spleen cells

cultured in vitro. These results suggest that IL-12 gene therapy could be used as adjunct therapy for coccidioidomycosis.

L76 ANSWER 7 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 5

ACCESSION NUMBER: 1999:83280 HCAPLUS

DOCUMENT NUMBER: 130:266091

Genetic vaccination against Coccidioides TITLE:

immitis: comparison of vaccine efficacy of recombinant antigen 2 and antigen 2 cDNA

AUTHOR(S): Jiang, Chengyong; Magee, D.

Mitchell; Quituqua, Teresa N.; Cox.

Rebecca A.

CORPORATE SOURCE: Department of Clinical Investigation, Texas

Center for Infectious Disease, San Antonio, TX,

78223, USA

SOURCE: Infection and Immunity (1999), 67(2), 630-635

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

AB Previous studies from our laboratory established that C-ASWS, an alkali-soluble, water-soluble extract from cell walls of **Coccidioides** immitis, protects mice against lethal challenge with this fungus.

The C-ASWS extract contains a glycosylated protein,

designated antigen 2 (Ag2), and a polysaccharide antigen. We recently cloned Ag2 cDNA and showed that the recombinant fusion

protein elicited strong delayed-type hypersensitivity

responses in immunized mice. This investigation was undertaken to determine if the recombinant Ag2 protein, expressed as an

Ag2-glutathione S-transferase (GST) fusion **protein**, or Ag2 cDNA would protect mice against lethal challenge with **C**.

immitis. The recombinant Ag2-GST protein

protected BALB/c mice against i.p. challenge with 250 arthroconidia,

as assessed by a decrease in fungal CFU in tissues. The

Ag2-GST-immunized mice did not show, however, an increased survival during a 30-day period postinfection. By contrast, immunization of mice with Ag2 cDNA ligated into the pVR1012 plasmid engendered protection against i.p. challenge with 2,500 arthroconidia and

against pulmonary challenge with 50 arthroconidia. Vaccine efficacy

paralleled the development of delayed-type hypersensitivity

responses to C. immitis antigen. Whereas mice

vaccinated with the recombinant Ag2-GST protein did not

mount footpad hypersensitivity to C-ASWS or the recombinant Ag2-GST

protein, mice vaccinated with the pVR1012-Ag2 construct

mounted a strong footpad hypersensitivity and their spleen cells

secreted gamma interferon upon in vitro stimulation with the

Ag2-containing C-ASWS extract This is the first investigation to show that

genetic immunization can protect against lethal challenge with

C. immitis.

SOURCE:

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L76 ANSWER 8 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 6

ACCESSION NUMBER: 1999:2211 HCAPLUS

DOCUMENT NUMBER: 130:135866

TITLE: Crystallization and preliminary x-ray analysis

of a chitinase from the fungal pathogen

Coccidioides immitis

AUTHOR(S): Hollis, Thomas; Monzingo, Arthur F.; Bortone,

Kara; Schelp, Elisabeth; Cox, Rebecca;

Robertus, Jon D.

CORPORATE SOURCE: Institute of Cellular and Molecular Biology,

Department of Chemistry and Biochemistry, University of Texas, Austin, TX, 78712, USA Acta Crystallographica, Section D: Biological

Crystallography (1998), D54(6, Pt. 2), 1412-1413

CODEN: ABCRE6; ISSN: 0907-4449
PUBLISHER: Munksgaard International Publishers Ltd.

DOCUMENT TYPE:

Journal

LANGUAGE: English

Chitinase from C. immitis was expressed as a fusion protein with gluathione-S-transferase (GST), which aided in its purification After cleavage from GST, the chitinase was crystallized from 30% PEG 4000 in 0.1M NaOAc, pH 4.6. The crystals had a tetragonal crystal lattice and belonged to space group P41212 or P43212 and diffracted to 2.2 Å resolution The unit-cell parameters were a = b = 91.2, c = 95.4 Å; there is only 1 chitinase mol. in the asym. unit.

REFERENCE COUNT:

12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L76 ANSWER 9 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 7

ACCESSION NUMBER:

1997:655696 HCAPLUS

DOCUMENT NUMBER:

127:330024

TITLE:

Mapping of a Coccidioides

immitis-specific epitope that reacts with

complement-fixing antibody

AUTHOR(S):

Yang, Michael C.; Magee, D. Mitchell;

Cox, Rebecca A.

CORPORATE SOURCE:

Department of Clinical Investigation, Texas

Center for Infectious Disease, San Antonio, TX,

78223, USA

SOURCE:

Infection and Immunity (1997), 65(10), 4068-4074

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology DOCUMENT TYPE: Journal

LANGUAGE: English

The authors have previously cloned the cDNA fragment that encodes the complement fixation antigen of Coccidioides immitis. The recombinant protein was highly sensitive in detecting CF antibody in sera from patients with coccidioidomycosis but was not specific to C. immitis, as evidence by its reactivity with sera from patients with histoplasmosis and, to lesser extent, blastomycosis. The authors undertook this study to determine if the epitope(s) that reacts with CF antibody is the same or differs from the epitopes that are shared with Histoplasma capsulatum and Blastomyces dermatitidis. PCR-generated CF/chitinase cDNA fragments were cloned and examined for their reactivity in enzyme-linked immunosorbent assays using sera from patients with coccidioidomycosis, histoplasmosis, or blastomycosis. A peptide domain comprised of amino acid residues 20 through

310 was shown to express an epitope(s) that is specific to anti-Coccidioides CF antibody. The peptide detected serum antibody in 21 (95%) of 22 patients with active coccidioidomycosis and was without reactivity with sera from 20 patients with histoplasmosis, 15 patients with blastomycosis, and 14 healthy subjects. Antibody titers to the recombinant peptide directly correlated with CF antibody titers (P < 0.01), and preadsorption of reference CF antiserum with the peptide ablated the reactivity of the antiserum in the immunodiffusion assay for CF antibody. The delineation of a recombinant peptide that has both sensitivity and specificity will provide a valuable tool for detecting CF antibody

and for evaluating the role of CF antibody in the host response to

Searcher :

C. immitis.

Shears

308-4994

L76 ANSWER 10 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 8

ACCESSION NUMBER:

1997:482804 HCAPLUS

DOCUMENT NUMBER:

127:204149

Identification of a Coccidioides

immitis antigen 2 domain that expresses

B-cell-reactive epitopes

AUTHOR(S):

Zhu, Yufan; Tryon, Vic; Magee, D.

Mitchell; Cox, Rebecca A.

CORPORATE SOURCE:

Department of Clinical Investigation, Texas Center for Infectious Disease, San Antonio, TX,

78223, USA

SOURCE:

Infection and Immunity (1997), 65(8), 3376-3380

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER:

American Society for Microbiology

DOCUMENT TYPE:

Journal

English LANGUAGE:

Antigen 2 (Ag2), a major immunoreactive component of C. immitis mycelium- and spherule-phase cell walls, was recently cloned and was shown to elicit T-cell responses in Coccidioides-immune mice. Here, the authors evaluated

recombinant Ag2 (rAg2) and PCR-generated Ag2 truncations for expression of B-cell-reactive epitopes in ELISA and immunoblot

assays with sera from patients with active

coccidioidomycosis, a hyperimmune goat anti-Ag2 serum, and a murine anti-Ag2 monoclonal antibody that recognizes a conformational epitope. The results established that rAg2 expresses both linear and conformational B-cell-reactive epitopes which are localized to a domain comprised of amino acids 19-96 (designated A19-96).

Truncations designed to identify epitopes within the A19-96 domain yielded fragments that either were nonreactive (A62-194, A19-61, and A49-79) or showed reduced reactivity (A19-79). Hence, A19-96 was the shortest domain expressing epitopes recognized by the panel of

antibodies. The prevalence of antibodies to the A19-96 domain was evaluated in ELISAs of sera from 28 coccidioidomycosis

patients. Antibody reactivity was detected in 79% of the patients' sera, and the level of antibody reactivity was directly correlated with disease severity. Whereas patients with pulmonary disease showed a mean response (A405) of 0.16, patients with disseminated

coccidioidomycosis showed a mean response of 0.69. No reactivity was detected with sera from histoplasmosis or

blastomycosis patients. The production of a recombinant peptide that expresses C. immitis-specific Ag2 epitopes

provides a useful reagent for examining the role of anti-Ag2 antibodies in coccidioidomycosis.

DUPLICATE 9 L76 ANSWER 11 OF 25 MEDLINE on STN

ACCESSION NUMBER: DOCUMENT NUMBER:

97160980 MEDLINE

TITLE:

AUTHOR:

97160980 PubMed ID: 9008276 Recombinant Coccidioides immitis

complement-fixing antigen: detection of an epitope

shared by C. immitis, Histoplasma

capsulatum, and Blastomyces dermatitidis. Yang M C; Magee D M; Kaufman L; Zhu Y;

CORPORATE SOURCE:

Department of Clinical Investigation, Texas Center for Infectious Disease, San Antonio 78223, USA.

CONTRACT NUMBER: AI12431 (NIAID)

SOURCE: CLINICAL AND DIAGNOSTIC LABORATORY IMMUNOLOGY, (1997

Jan) 4 (1) 19-22.

Journal code: 9421292. ISSN: 1071-412X.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199704

ENTRY DATE: Entered STN: 19970422

Last Updated on STN: 19970422 Entered Medline: 19970408

AB We undertook an investigation to assess the utility of a recombinant

Coccidioides immitis complement-fixing (CF) antigen for

detecting CF antibody in sera from patients with coccidioidomycosis. Enzyme-linked immunosorbent assays established that recombinant CF antigen and, for comparison, a commercially available coccidioidin were reactive with 19 of 19 sera from patients with active coccidioidomycosis. The recombinant antigen was significantly more sensitive than coccidioidin. The median titer obtained when patients' sera were assayed against recombinant CF antigen was 1:51,200 compared to 1:25,600 with coccidioidin (P < 0.027). The recombinant antigen was also more effective in distinguishing the antibody levels in sera from patients with pulmonary coccidioidomycosis than in sera from those with disseminated disease. Whereas patients with pulmonary disease showed a median antibody titer of 1:25,600, those with multifocal disease showed a median titer of 1:102,400 (P < 0.028). The recombinant CF antigen was found, however, to express an epitope(s) that reacted with sera from 6 of 12 patients with histoplasmosis and 2 of 12 patients with

L76 ANSWER 12 OF 25 MEDLINE ON STN ACCESSION NUMBER: 96355868 MEDLINE

DOCUMENT NUMBER: 96355868 PubMed ID: 8751906

TITLE: Interleukin-12 regulation of host defenses against

Coccidioides immitis.

AUTHOR: Magee D M; Cox R A

CORPORATE SOURCE: Department of Clinical Investigation, Texas Center

for Infectious Diseases, San Antonio 78223, USA...

mmagee@tcid.tdh.state.tx.us

CONTRACT NUMBER: AI23555 (NIAID)

SOURCE: INFECTION AND IMMUNITY, (1996 Sep) 64 (9) 3609-13.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

blastomycosis.

FILE SEGMENT: Priority Journals; AIDS

ENTRY MONTH: 199610

ENTRY DATE: Entered STN: 19961015

Last Updated on STN: 19961015 Entered Medline: 19961003

AB We have previously reported on the alternate regulation of gamma interferon (IFN-gamma) and interleukin-4 (IL-4) in inbred mouse strains which differ in their susceptibility to **Coccidioides** immitis. The genetically resistant DBA/2 mice manifest a predominant T-helper 1 (Th1) response, with early production of IFN-gamma, whereas susceptible BALB/c mice show an early production

of the Th2 cytokine IL-4. Since IL-12 is one cytokine that can act early during host defenses to promote the differentiation of cytokine production towards IFN-gamma and thus may promote expression of a protective immune response, we investigated the role of IL-12 in resistance to C. immitis. Administration of recombinant IL-12 to the susceptible mouse strain before and after systemic (intraperitoneal) challenge with C . immitis significantly ameliorated the course of the disease, as measured by a reduction in the fungal load in the lungs, liver, and spleen. Analysis of the cytokine mRNA in lungs from infected BALB/c mice revealed that the protective effect of recombinant IL-12 was accompanied by a shift from a Th2 to a Th1 response. The importance of IL-12 in resistance to this fungus was further established by showing that neutralization of endogenous IL-12 in the resistant DBA/2 mouse strain led to a significant increase in the fungal burden in pulmonary and extrapulmonary tissues. These results establish that IL-12 plays a pivotal role in the host defense against systemic challenge with C. immitis.

L76 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 10

ACCESSION NUMBER: 1996:391996 HCAPLUS

DOCUMENT NUMBER: 125:55750

TITLE: Molecular cloning and characterization of

Coccidioides immitis antigen 2 cDNA

AUTHOR(S): Zhu, Yufan; Yang, Chunmu; Magee, D.

Mitchell; Cox, Rebecca A.

CORPORATE SOURCE: Dep. Clinical Investigation, Texas Center

Infectious Disease, San Antonio, TX, 78223, USA

SOURCE: Infection and Immunity (1996), 64(7), 2695-2699

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

Previous expts. have provided evidence that Coccidioides immitis antigen 2 (Ag2) is a major T-cell-reactive component of mycelia and spherule cell walls. Here the authors report the identification and cloning of the cDNA that encodes Ag2 from a lambda ZAP cDNA expression library constructed from spherule-derived RNA. DNA sequence anal. established that the 1,255-bp clone contains a 174-bp 5' untranslated region, a 582-bp open reading frame which encodes for a protein consisting of 194 amino acids, and a 375-bp 3' untranslated region, including a poly(A) tail. The recombinant Aq2 protein has a predicted mol. mass of 19.5 kDa and contains an 18-amino-acid N terminus which has been tentatively identified as a signal peptide. The Ag2 cDNA was ligated into the pGEX-4T-3 vector and expressed in Escherichia coli TG-1 cells as a glutathione S-transferase fusion protein. The recombinant fusion protein showed reactivity with sera from patients with coccidioidomycosis and elicited delayed-type footpad hypersensitivity responses in Coccidioides-immune mice. These results suggest that the Ag2 cDNA can be used for the large-scale production of this immunol. important protein.

L76 ANSWER 14 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 11

ACCESSION NUMBER: 1996:327965 HCAPLUS

DOCUMENT NUMBER: 125:28509

TITLE: Molecular cloning and characterization of the

Coccidioides immitis complement

fixation/chitinase antigen

AUTHOR(S): Yang, Chunmu; Zhu, Yufan; Magee, D.

Mitchell; Cox, Rebecca A.

CORPORATE SOURCE: Department Clinical Investigation, Texas Center

Infectious disease, San Antonio, TX, 78223, USA

SOURCE: Infection and Immunity (1996), 64(6), 1992-1997

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

AB Detection of anti-Coccidioides complement-fixing (CF) antibody is a valuable diagnostic and prognostic aid in coccidioidomycosis. The CF antibody response is directed

against a heat-labile antigen that has chitinase activity, hereafter referred to as the CF/chitinase protein. To identify and

referred to as the CF/chitinase **protein**. To identify and clone this immunoreactive enzyme, the authors constructed a **Coccidioides** immitis cDNA lambda ZAP expression library from

spherule RNA and detected fusion peptides expressing CF

epitopes by immunoscreening. A cDNA clone consisting of 1623 bp was identified, sequenced, and found to contain a single open reading

frame that encodes a protein of 47 kDa with 427 amino

acids. Deduced amino acid sequence analyses showed that the cloned CF/chitinase cDNA contains a 35-amino-acid region, beginning at Ser-18 and ending at Arg-52, which has 92% homol. with the reported

N-terminal amino acid sequence of authentic CF/chitinase protein. The first 17 amino acids in the deduced sequence of the cloned cDNA are not present on the mature CF/chitinase

protein, suggesting that it may be a signal peptide
. Expression of the CF/chitinase cDNA insert by using the pGEX-4T-3
vector yields a fusion peptide that bears CF-specific

epitopes and shows chitinase activity. The CF/chitinase clone will enable large-scale production of the recombinant CF antigen for use in immunoassays and facilitate studies on the role of chitinase in the morphogenesis of C immitis.

L76 ANSWER 15 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 12

ACCESSION NUMBER: 1996:737195 HCAPLUS

DOCUMENT NUMBER: 126:86206

TITLE: Coccidioides immitis Antigen 2: analysis of gene and protein

AUTHOR(S): Zhu, Yufan; Yang, Chunmu; Magee, D.

Mitchell; Cox, Rebecca A.

CORPORATE SOURCE: Department of Clinical Investigation, Texas

Center for Infectious Disease, 2303 SE Military

Drive, San Antonio, TX, 78223, USA

SOURCE: Gene (1996), 181(1/2), 121-125

CODEN: GENED6; ISSN: 0378-1119

PUBLISHER: Elsevier DOCUMENT TYPE: Journal LANGUAGE: English

AB Antigen 2 is a glycosylated **protein** present in the cell walls of the dimorphic fungus **Coccidioides** immitis. Using

oligodeoxyribonucleotide (oligo) primers based on the sequences of Ag2 cDNA, the gene encoding Ag2 was cloned from genomic DNA derived from the mycelial phase of C. immitis by PCR.

Nucleotide (nt) sequence analyses showed a 582 base pair (bp) ORF

disrupted by two introns which are 78bp and 10lbp long. The deduced primary translation product consists of 194 amino acids (aa), contains an N-terminal putative signal sequence to allow transport into the endoplasmic reticulum, and a C-terminal putative signal sequence to enable a GPI anchor addition Putative GPI anchor/cleavage site and O-glycosylation sites, as well as phosphorylation and myristoylation sites are also present. On the basis of these analyses, the authors predict that a prepro-Ag2 undergoes a post-translational modification to yield the mature glycosylated Ag2 protein which is anchored on the extracellular plasma membrane of mycelial and spherule-phase cells.

L76 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 13

ACCESSION NUMBER: 1995:781432 HCAPLUS

DOCUMENT NUMBER: 123:196430

TITLE: Roles of gamma interferon and interleukin-4 in

genetically determined resistance to

Coccidioides immitis

AUTHOR(S): Magee, D. Mitchell; Cox, Rebecca

Δ.

CORPORATE SOURCE: Dep. Res. Immunol., Texas Cent. Infectious

Diseases, San Antonio, TX, 78223, USA

SOURCE: Infection and Immunity (1995), 63(9), 3514-19

CODEN: INFIBR; ISSN: 0019-9567

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal LANGUAGE: English

The profiles of γ interferon (IFN- γ) and interleukin-4 AΒ (IL-4) production were valuated during the course of coccidioidomycosis in 2 inbred mouse strains which differ in their susceptibility to C. immitis. Cytokine responses, measured at the mol. and protein levels, showed increased levels of IFN- γ in lung exts. from mice of the resistant DBA/2 strain after a pulmonary challenge, whereas the susceptible BALB/c strain manifested a predominant IL-4 response. The importance of these cytokines in host defense against ${\bf C}$. immitis was established by treating the mice with recombinant cytokines or neutralizing anticytokine monoclonal antibodies. Treatment of the susceptible BALB/c mice with recombinant murine IFN- γ protected mice against systemic challenge, and in the reciprocal experiment, the administration of an anti-IFN- γ monoclonal antibody to the resistant DBA/2 mice decreased their capacity to control disease. Although the treatment of DBA/2 mice with recombinant IL-4 did not alter the disease, neutralization of endogenous IL-4 in infected BALB/c mice by administration of a neutralizing anti-IL-4 antibody led to a reduction in the fungal load in their tissues. Apparently, IFN-γ plays a pivotal role in resistance to C. immitis,

L76 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 14

whereas IL-4 down-regulates protective immunity against C.

ACCESSION NUMBER: 1993:426295 HCAPLUS

DOCUMENT NUMBER: 119:26295

immitis.

TITLE: Production of a murine monoclonal antibody that

recognizes an epitope specific to **Coccidioides** immitis antigen 2

AUTHOR(S): Cox, Rebecca A.; Dolan, Matthew J.;

Magee, D. Mitchell; Galgiani, John N.

CORPORATE SOURCE: Dep. Res. Immunol., San Antonio State Chest

Hosp., San Antionio, TX, 78223, USA

SOURCE: Infection and Immunity (1993), 61(5), 1895-9

CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal LANGUAGE: English

Antigen 2 (Ag2) has been implicated as a T-cell-reactive component

of the pathogenic fungus C. immitis. This report describes the production of a murine monoclonal antibody (MAb) of

the IgG2a isotype that recognizes an epitope specific to C

.immitis Ag2. This specificity was evidenced by the

finding that the MAb did not recognize other antigens present in coccidioidin or spherulin and did not show reactivity with antigenic exts. from Histoplasma capsulatum or Blastomyces dermatitidis. The epitope was labile to enzymic digestion with

pronase but resistant to treatment with glycolytic enzymes and to periodate oxidation This peptide epitope appears to require conformational structure because it was not recognized by the MAb in

immunoblots of antigen that had been electrophoresed in polyacrylamide gels under denaturing, reducing conditions.

Immunoaffinity chromatog. of spherulin on columns containing the MAb established that the MAb was effective as a ligand for isolating Ag2 from heterogeneous exts. The production of a MAb which recognizes an Ag2-specific epitope and its utility as a ligand for isolating Ag2 will provide a valuable reagent for studies of this immunol.

important antigen.

L76 ANSWER 18 OF 25 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN DUPLICATE 15

ACCESSION NUMBER: 92245388 EMBASE

1992245388 DOCUMENT NUMBER:

TITLE: Localization of the tube precipitin and complement

fixation antigens of Coccidioides immitis

by immunoelectron microscopy with murine monoclonal

antibodies.

AUTHOR: Cox R.A.; Sun S.H.; Dolan M.J.; Harrison

J.L.

CORPORATE SOURCE: Department of Research Immunology, San Antonio State

Chest Hospital, San Antonio, TX 78223, United States

Infection and Immunity, (1992) 60/8 (3315-3324). ISSN: 0019-9567 CODEN: INFIBR SOURCE:

COUNTRY: United States DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 004 Microbiology

> 005 General Pathology and Pathological Anatomy

026 Immunology, Serology and Transplantation

LANGUAGE: English SUMMARY LANGUAGE: English

The cellular localization of the tube precipitin (TP) and complement fixation (CF) antigens of Coccidioides immitis was

examined by immunoelectron microscopy with murine immunoglobulin G1 monoclonal antibodies directed against the TP and CF antigens, respectively. Immunoelectron microscopic analyses of saprobic- and parasitic-phase cells showed that the TP antigen is present at a high concentration within the inner cell wall layer and along the

plasma membrane. The antigen was also detected, at a lesser concentration, within cytoplasmic vacuoles. In contrast to the

predominant localization of the TP antigen in the cell walls, the CF antigen resides primarily within the cytoplasm, where it appears to be dispersed throughout the cytoplasm rather than associated with a specific cytoplasmic organelle. A sparse amount of the CF antigen within the inner cell walls was also demonstrable. The localization of the TP and CF antigens throughout the morphogenetic phases of C. immitis has important implications in antigen production and in analyses of host response in coccidioidomycosis.

L76 ANSWER 19 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 16

1991:533582 HCAPLUS ACCESSION NUMBER:

DOCUMENT NUMBER: 115:133582

TITLE: An immunoreactive apoglycoprotein purified from

Coccidioides immitis

Dugger, Kris O.; Galgiani, John N.; Ampel, Neil AUTHOR(S):

M.; Sun, Sung H.; Magee, D. Mitchell;

Harrison, Jeff; Law, John H.

Med. Res. Serv., Veterans Aff. Med. Cent., CORPORATE SOURCE:

Tucson, AZ, 85723, USA

SOURCE: Infection and Immunity (1991), 59(7), 2245-51

CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal . LANGUAGE: English

Deglycosylation of glycoproteins in a lysate of spherules of C. immitis has permitted purification and partial characterization of a proline-rich pronase-sensitive antigen. Moreover, soluble antigen specifically stimulated lymphocytes from persons with dermal delayed-type hypersensitivity to coccidioidal antigens. When related to reference coccidioidin by tandem 2-dimensional immunoelectrophoresis, the antigen fused in the anodal region with a specific reference antigen (antigen 2). It did not show identity with coccidioidal antigens used in conventional serol. assays. Although immunoblots of the purified protein with monospecific rabbit antiserum showed a single antigen at 33 kDa, the parent spherule lysate bound the same antibody in a broad band between 70 and >200 kDa, which could be explained by microheterogeneity of glycosylation. Immunoelectron microscopy using affinity-purified human antibodies localized the antigen to the cell wall and internal septa of

L76 ANSWER 20 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 17

1991:490408 HCAPLUS ACCESSION NUMBER:

responses to coccidioidal infection.

DOCUMENT NUMBER: 115:90408

Production and characterization of a monoclonal TITLE:

spherules. The apoglycoprotein may be important in human immune

antibody to the complement fixation antigen of

Coccidioides immitis

Dolan, Matthew J.; Cox, Rebecca A. AUTHOR(S):

Dep. Res. Immunol., San Antonio State Chest Hosp., San Antonio, TX, 78223, USA CORPORATE SOURCE:

Infection and Immunity (1991), 59(6), 2175-80 SOURCE:

CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal LANGUAGE: English

AB · Detection of complement-fixing antibody to coccidioidin by using the complement fixation test or an immunodiffusion assay for

> 308-4994 Searcher : Shears

complement-fixing antibody (IDCF) is widely viewed as the most useful immunodiagnostic test for coccidioidomycosis. Here is reported the production of an IgG1 monoclonal antibody (MAb) to the IDCF antigen for use as a biospecific ligand for purifying the IDCF antigen on solid-phase immunosorbents and for use as a reagent for screening genomic or cDNA expression libraries from C. immitis. BALB/c mice were immunized by i.m. injections of coccidioidin in adjuvant, followed by an intrasplenic booster injection of coccidioidin in saline. The spleen cells were fused with SP2/O Ag14 myeloma cells, and the fusion products were screened for IgG antibody to coccidioidin by using an ELISA. Pos. hybridomas were cloned and evaluated for reactivity to the IDCF antigen by 2-dimensional immunoelectrophoresis and by immunoblotting. The epitope recognized by the MAb was heat labile (60°, 30 min) and susceptible to enzymic digestion with pronase but was resistant to treatment with lipase, α -mannosidase, glucose oxidase, and endoglycosidase H. This heat-labile peptide epitope appears to be specific to C. immitis, as judged by the fact that the MAb was not reactive in immunoblots or ELISAs of histoplasmin or blastomycin.

L76 ANSWER 21 OF 25 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 18

ACCESSION NUMBER: 1989:455564 HCAPLUS

DOCUMENT NUMBER: 111:55564

TITLE: Induction of tumor necrosis factor alpha by

spherules of Coccidioides immitis

AUTHOR(S): Slagle, David C.; Cox, Rebecca A.;

Kuruganti, Uma

CORPORATE SOURCE: Dep. Res. Immunol., San Antonio State Chest

Hosp., San Antonio, TX, 78223, USA

SOURCE: Infection and Immunity (1989), 57(7), 1916-21

CODEN: INFIBR; ISSN: 0019-9567

DOCUMENT TYPE: Journal LANGUAGE: English

The cytokine tumor necrosis factor α (TNF- α) functions as an immunomodulatory protein and as a mediator of cachexia. Here, the viable or formalin-killed spherules of C. immitis induced the secretion of TNF- α by peritoneal-exudate cells from BALB/c mice. The identification of the cytokine as TNF- α was based on its lytic activity against the $\bar{T}NF-\alpha$ -sensitive Ls murine fibrosarcoma cell line but not the TNF- α -resistant LR cell line, its neutralization by rabbit anti-TNF- α , and its secretion by peritoneal cells having characteristics of macrophages. The induction of TNF- α was attributable to spherules and not to contaminating lipopolysaccharide (endotoxin), as evidenced by the finding that polymyxin B, a reagent that blocks the TNF- α -inducing component of lipopolysaccharide, did not negate the production of $TNF-\alpha$ in response to spherules, whereas pretreatment of spherules with hyperimmune goat antiserum to spherulin neutralized the induction of TNF- α by these cells. The demonstration that C. immitis activates macrophages to secrete $TNF-\alpha$ in vitro is a new finding and warrants studies to determine whether this cytokine is produced during active coccidioidomycosis.

L76 ANSWER 22 OF 25 MEDLINE on STN DUPLICATE 19

ACCESSION NUMBER: 88085464 MEDLINE

DOCUMENT NUMBER: 88085464 PubMed ID: 3335400

TITLE: Induction and expression of cell-mediated immune

responses in inbred mice infected with

Coccidioides immitis.

AUTHOR: Cox R A; Kennell W; Boncyk L; Murphy J W

CORPORATE SOURCE: Department of Research Immunology, San Antonio State

Chest Hospital, Texas 78223.

CONTRACT NUMBER: AI23555 (NIAID)

SOURCE: INFECTION AND IMMUNITY, (1988 Jan) 56 (1) 13-7.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

198802 ENTRY MONTH:

ENTRY DATE: Entered STN: 19900305

Last Updated on STN: 19970203 Entered Medline: 19880209

Comparisons of the course of coccidioidomycosis in two AB strains of inbred mice established that BALB/c mice are significantly more susceptible to pulmonary infection with

Coccidioides immitis than are DBA/2 mice. The

susceptibility of BALB/c mice does not reside in their inability to

mount a delayed-type hypersensitivity response to C. immitis antigen. That is, BALB/c mice manifested footpad hypersensitivity to coccidioidin early during the course

of disease, to a level comparable to that of DBA/2 mice. In contrast to the more resistant DBA/2 mouse strain, however, BALB/c

mice developed anergy by day 15 postinfection. Suppression of the

delayed-type hypersensitivity response was not specific for

C. immitis antigen, as evidenced by the finding

that BALB/c mice immunized with mycobacterial purified

protein derivative prior to infection with C.

immitis were suppressed in their footpad response to mycobacterial antigen at day 15 postinfection. Taken together, these results establish that genetically determined susceptibility

to this fungus is associated with an acquired suppression of cell-mediated immune reactivity.

L76 ANSWER 23 OF 25 MEDLINE on STN DUPLICATE 20

ACCESSION NUMBER: 87193089 MEDLINE

DOCUMENT NUMBER: 87193089 PubMed ID: 3552984

TITLE: Serum-mediated suppression of lymphocyte

transformation responses in

coccidioidomycosis.

AUTHOR: Cox R A; Pope R M

CONTRACT NUMBER: AI 18761 (NIAID)

SOURCE: INFECTION AND IMMUNITY, (1987 May) 55 (5) 1058-62.

Journal code: 0246127. ISSN: 0019-9567.

PUB. COUNTRY: United States

Journal; Article; (JOURNAL ARTICLE) DOCUMENT TYPE:

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198706

Entered STN: 19900303 ENTRY DATE:

> Last Updated on STN: 19970203 Entered Medline: 19870605

Lymphocyte transformation (LT) responses to coccidioidin (CDN) and spherulin were suppressed in 11 (73%) of 15 patients with active coccidioidomycosis when their mononuclear cells were assayed in autologous serum as compared to serum from healthy, CDN skin test-positive subjects. Suppressed LT responses were specific for Coccidioides immitis antigens in 7 (64%) of the 11 patients. Immunoaffinity chromatography of patient sera with Staphylococcus protein A adsorbed the suppressor component(s) and thereby established that suppression was attributed to immunoglobulin G, either alone or complexed with antigen. The possibility that suppression was mediated by immune complexes was examined by adding complexes formed in vivo or in vitro to mononuclear cell cultures of healthy CDN-reactive persons before LT assays. Although complexes prepared in this manner were reactive in an enzyme-linked immunosorbent assay designed to detect Coccidioides antigen-specific immune complexes, no suppression of LT responses was observed. We conclude that serum-mediated suppression of LT responses in coccidioidomycosis is attributed to monomeric and not immune-complexed immunoglobulin G antibody.

L76 ANSWER 24 OF 25 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on

STN

ACCESSION NUMBER:

1984:33723 BIOSIS

DOCUMENT NUMBER:

PREV198426033723; BR26:33723

TITLE:

CHEMICAL COMPOSITION OF A MYCELIAL AND SPHERULE CELL

WALL ANTIGEN FROM COCCIDIOIDES-IMMITIS.

AUTHOR(S):

OLSBERG C A [Reprint author]; COX R A

CORPORATE SOURCE: SOURCE:

UNIV TEX HEALTH SCI CENT, SAN ANTONIO, TX, USA Abstracts of the Annual Meeting of the American Society for Microbiology, (1983) Vol. 83, pp. F6. Meeting Info.: 83RD ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LA., USA, MAR.

6-11, 1983. ABSTR ANNU MEET AM SOC MICROBIOL.

CODEN: ASMACK. ISSN: 0094-8519.

DOCUMENT TYPE:

Conference; (Meeting)

FILE SEGMENT:

LANGUAGE: ENGLISH

L76 ANSWER 25 OF 25 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on

STN

ACCESSION NUMBER:

1978:79432 BIOSIS

DOCUMENT NUMBER:

PREV197815022932; BR15:22932

TITLE:

CHEMICAL COMPOSITION OF AN ALKALI SOLUBLE WATER

SOLUBLE ANTIGEN FROM COCCIDIOIDES-IMMITIS.

AUTHOR(S):

FLEMING W H III; LAND G A; COX R A

SOURCE:

Abstracts of the Annual Meeting of the American Society for Microbiology, (1978) Vol. 78.1978, pp.

314.

CODEN: ASMACK. ISSN: 0094-8519.

DOCUMENT TYPE:

Article

BR

FILE SEGMENT:

RR

LANGUAGE:

Unavailable

FILE 'HOME' ENTERED AT 09:51:03 ON 04 DEC 2003

```
US-10-029-386-16850/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      υυυυυ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Command line parameters:
-MODEL=frame+p2n-model-USExth
-MODEL=frame+p2n-model-USExth
-MODEL=frame+p2n-model-USExth
-MODEL=frame+p2n-model-USExth
-MODEL=frame+p2n-model-USExth
-MODEL=frame-p2n-model-USExth
-MODEL=frame-MINMATGH=0.1
-MODEL=0.LOGPEXT=0.UNITS=bits -START=1.END=-1.MATRIX=biosum62
-LOGPEXT=0.LOGPEXT=0.CNITS=45.DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100
-TRANS=human40.cdi -LSTS=45.DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100
-TRANS=human40.cdi -LSTS=45.DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100
-MAXLEN=200000000 -USER=LOS1009193.GCGN 1 1.164.@runat 1211203 144408_3740
-NORPU=6.ICPU=3.NO_MMAP-LARGGQUERT -NGG_SCORES=0.WAIT_-DSPBLOGK=100
-LONGLOG -DEV_TIMEOUT=120 -WARN TIMEOUT=30 -THREADS=1 -SGAPOP=10 -SGAPEXT=0.5
-FGAPOP=6 -FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 16850, A
                                                                                                                                                                                                                                                           November 13, 2003, 12:34:43 ; Search time 214 Seconds (without alignments) 274.896 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, a derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/USO7_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT NEW PUB.seq:*
3: /cgn2_6/ptodata/2/pubpna/USO6_NEW PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/USO6_PUBCOMB.seq:*
5: /cgn2_6/ptodata/2/pubpna/DCTUS_NEW PUB.seq:*
6: /cgn2_6/ptodata/2/pubpna/DCTUS_NEW PUB.seq:*
7: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
8: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
9: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
12: /cgn2_6/ptodata/2/pubpna/USO9_NEW PUB.seq:*
13: /cgn2_6/ptodata/2/pubpna/USO9_NEW PUB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO9_NEW PUB.seq:*
15: /cgn2_6/ptodata/2/pubpna/USO9_NEW PUB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
17: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
17: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
17: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
18: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
19: /cgn2_6/ptodata/2/pubpna/USO0_NEW PUB.seq:*
10: /cgn2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seg: *
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                            OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168 12 US-10-029-386-16850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2169961 segs, 1634102185 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MQFSHALIALVAAGLASA 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match Length DB ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2
82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. i
score great
and is deri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jarabase :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seguence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perfect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
```

```
Sequence 16850, Application US/10029386

Sequence 16850, Application No. US200301947041

GENERAL INFORMATION:
APPLICANT: Rank, David R.
APPLICANT: Rank, David R.
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR (TITLE OF INVENTION: HUMAN GENOME-DERIVED TWO NUMBER: US/10/029,386
CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT APPLICATION NUMBER: US/10/029,386
SOFTWARE: Annomax Sequence Listing Engine vers: 1.1

LENGTH: 168
                                                                          Sequence 2, Appli
Sequence 18, Appli
Sequence 18, Appl
Sequence 16, Appl
Sequence 16, Appl
Sequence 12, Appl
Sequence 12, Appl
Sequence 12, Appl
Sequence 13, Appl
Sequence 13, Appl
Sequence 18, Appl
Sequence 18, Appl
Sequence 584, Appl
Sequence 584, Appl
Sequence 580, Appl
Sequence 1, Appl
Sequence 6119, Appl
Sequence 6119, Appl
Sequence 6119, Appl
Sequence 6119, Appl
Sequence 1, Appl
Sequence 18, Appl
Sequence 18, Appl
Sequence 216, Appl
Sequence 216, Appl
Sequence 216, Appl
Sequence 216, Appl
Sequence 218, Appl
Sequence 1850, Appl
                                                            95893, A
305915,
2, Appli
889, App
1638, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                185078,
185079,
203917,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 185079
Sequence 185077
                         Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŧI
12 US-10-029-386-3150
12 US-10-027-632-95893
13 US-10-027-632-95893
13 US-10-027-632-95893
13 US-10-027-632-95893
13 US-10-027-632-95893
13 US-10-027-632-95893
11 US-09-991-936-889
11 US-09-991-936-889
11 US-09-991-936-889
12 US-09-991-936-889
13 US-10-198-846-12310
14 US-09-991-936-975
14 US-09-991-936-975
14 US-09-991-936-975
14 US-09-991-936-975
15 US-09-991-936-975
16 US-09-991-936-975
17 US-09-991-936-975
18 US-09-991-936-975
19 US-09-991-936-975
10 US-09-991-936-975
11 US-09-991-995-975
12 US-10-190-305A-71
12 US-10-190-305A-71
13 US-09-918-995-36566
12 US-10-190-305A-71
13 US-09-918-995-36566
13 US-09-918-995-36566
13 US-09-918-995-36566
14 US-09-918-995-36566
15 US-00-27-632-281505
13 US-10-027-632-281505
13 US-10-027-632-185079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORDIENS
ORCANISM: Homo sapiens
FEATURE:
CTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL
OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 0.9
OTHER INFORMATION: EXPRESSED IN HELA, SIGNAL = 1.1
OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1
                                                                                                                                                                                                                                                                                                                                                                                                                                        99
112
113
113
113
113
113
113
113
113
 55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55.1.

55
```

```
15. Sequence 305915, Application US/10027632

Publication No. US20030204075A9

GENERAL INFORMATION:

APPLICANT: Wang, David G.

TITLE OF INVENTION: Identification and Mapping of Single Nucleotide

TITLE OF INVENTION: Identification and Mapping of Single Nucleotide

TITLE OF INVENTION: OFOURTHORN INFORMATION: POLYMORPHICANT PLING DATE: 2002-04-30

CURRENT APPLICATION NUMBER: US 60/218,006

PRIOR APPLICATION NUMBER: US 60/198,676

PRIOR FILING DATE: 2000-07-12

PRIOR PILING DATE: 2000-04-20

PRIOR PLING DATE: 2000-03-29

PRIOR APPLICATION NUMBER: US 60/183,483

PRIOR PLING DATE: 2000-03-29

PRIOR PLING DATE: 1000-03-29

PRIOR PLING DATE: 1099-11-23

PRIOR PLING DATE: 1099-11-23

PRIOR PLING DATE: 1999-10-28

PRIOR PLING DATE: 1999-10-38

PRIOR PLING DATE: 1999-10-38

PRIOR FILING DATE: 1999-10-38

PRIOR FILING DATE: 1999-10-38

PRIOR PLING DATE: 1999-10-38
                   TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
FILE REFERENCE: 108827.129
CURRENT APPLICATION WINBER: US/10/027,632
CURRENT APPLICATION NUMBER: US 60/218,006
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-20
PRIOR FILING DATE: 2000-07-20
PRIOR FILING DATE: 2000-03-29
PRIOR FILING DATE: 1900-02-28
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-09
PRIOR FILING DATE: 1999-09-09
PRIOR FILING DATE: 1999-09-09
PRIOR FILING DATE: 1999-09-09
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SEQ ID NO 95893
LENGTH: 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320 TTTTCCCATATGATGATAGCACTCATAACTGCTGGG 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGly 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JS-10-081-935-2 (1-18) x US-10-027-632-95893 (1-548)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25.6
44.00
83.33%
66.67%
53.66%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-027-632-305915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Human
US-10-027-632-305915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Human
US-10-027-632-95893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-029-386-3150/c
Sequence 3150, Application US/10029386
Sequence 3150, Application US/10029386
Sequence 3150, Application US/10029386
Sequence 3150, Application US/10029386
GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Hanzel, David R.
APPLICANT: Hanzel, David R.
FILE REFERENCE: ACOUNTION: EXPRESSION ANALYSIS TWO
TITLE OF INVENTION: EXPRESSION ANALYSIS TWO
FILE REFERENCE: ACOUNTION: EXPRESSION ANALYSIS TWO
CURRENT FILING DATE: 2001-112-20
NUMBER OF SEQ ID NOS: 34288
SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
SEQ ID NO 3150
LENGTH: 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :::||| :::||||||||||:::
110 CTTCAACACAATCATGCCCTAGTTACTTTGGTAGCAGAAAACCTTGCAACT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: MAP TO CHRX.1

OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 0.9

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 0.9

OTHER INFORMATION: EXPRESSED IN HELA, SIGNAL = 1.1

OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 1.1

OTHER INFORMATION: EXPRESSED IN HEARIN, SIGNAL = 1.0

OTHER INFORMATION: SURSEROT HIT: G93008, EVALUE 2.00e-19

OTHER INFORMATION: EST HUMAN HIT: AM996853.1, EVALUE 5.00e-79

OTHER INFORMATION: NT HIT: 9114764084, EVALUE 3.00e-70
; OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 1.1
; OTHER INFORMATION: EXPRESSED IN HEART, SIGNAL = 1
; OTHER INFORMATION: SWISSPROT HIT: Q93008, EVALUE 5.00e-20
; OTHER INFORMATION: NT HIT: gi14764091, EVALUE 9.00e-71
; OTHER INFORMATION: EST_HUMAN HIT: AW996853.1, EVALUE 5.00e-73
US-10-029-386-16650
                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-081-935-2 (1-18) x US-10-029-386-16850 (1-168)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-10-029-386-3150 (1-569)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 95893, Application US/10027632; Publication No. US20030204075A9; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                             46.00
76.47
52.94
56.10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.00
76.47
52.94
56.10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Wang, David G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-027-632-95893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-029-386-3150
                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
```

```
Sequence 95893, Application US/10027632

Seguence 95893, Application US/10027632

GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Dolymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT PAPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2000-07-12
FRIOR PAPLICATION NUMBER: US 60/198,676
FRIOR FILING DATE: 2000-04-20
FRIOR FILING DATE: 2000-04-20
FRIOR FILING DATE: 2000-03-29
FRIOR FILING DATE: 2000-03-29
FRIOR FILING DATE: 2000-03-29
FRIOR FILING DATE: 1999-09-28
FRIOR FILING DATE: 1999-09-09
FRIOR FILING DATE: 1999-09-09
FRIOR FILING DATE: 1999-09-09
FRIOR FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NESOL. 632-305915

Sequence 305915, Application US/10027632

GENERAL INFORMATION:
TENEL INFORMATION:
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
FRIOR APPLICATION NUMBER: US 60/218,006
FRIOR FILING DATE: 2000-07-12
                                                                                                                                                                                                                                                                                                                               320 TTTTCCCATATGATGATAGCACTCATAACTGCTGGG 355
                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 PheSerHisAlaLeulleAlaLeuValAlaAlaGly 14
                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-10-027-632-305915 (1-548)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-081-935-2 (1-18) x US-10-027-632-95893 (1-548)
                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25.6
44.00
83.33%
66.67%
53.66%
                                                                                               83.33$
66.67$
53.66$
                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
US-10-027-632-95893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-027-632-95893
Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                               Query Natch:
                               Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
```

```
ARII, Huda

Lucant Bunney, William E.

APPLICANT Bunney, William E.

APPLICANT Cox, David R.

APPLICANT Cox, David R.

APPLICANT Cox, David R.

APPLICANT Evans, Simon

APPLICANT Li, Jun F.

APPLICANT Li, Jun F.

APPLICANT Li, Jun F.

APPLICANT LI, Simon

APPLICANT LI, Jun F.

APPLICANT LI, Simon

APPLICANT LI, Mun F.

APPLICANT APPLICATION NUMBER: US, 10,293,582

CURRENT APPLICATION NUMBER: US, 60,339,252

FRIOR FILING DATE: 2002-11-12

SEQ ID NO 2

SEQ ID NO 2

LENGTH: 9372

TYPE: DNA

OPPLICANT NAME APPLICATION NUMBER OF SEQ ID NOS: 39

SEQ ID NO 2

LENGTH: 9372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: chromosome Y ubiquitin-specific cysteine protease OTHER INFORMATION: 9 (USP9Y) (DFFRY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                320 TITICCCATATGATGATAGCACTCATAACTGCTGGG 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 PheSerHisAlaLeulleAlaLeuValAlaAlaGly 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18) x US-10-027-632-305915 (1-548)
             PRIOR FILING DATE: 2000-04-20
PRIOR PILING DATE: 2000-04-20
PRIOR PILING DATE: 2000-03-29
PRIOR PILING DATE: 2000-03-29
PRIOR PILING DATE: 2000-03-29
PRIOR PILING DATE: 2000-02-24
PRIOR PILING DATE: 1999-11-23
PRIOR PILING DATE: 1999-01-23
PRIOR PILING DATE: 1999-09-28
PRIOR PILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOOTHWRE: PASSESEQ FOR WINDOWS VERSION 4.0
SEQ ID NO 305915
APPLICATION NUMBER: US 60/198,676
                                                                                                                                                                                                                                                                                                                                                                                                                                                         25.6
44.00
83.33%
66.67%
53.66%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           881
44.00
76.47
52.94
53.66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Human
US-10-027-632-305915
                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-293-582-2
                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.:
```

ò

```
Percent Similarity:
Best Local Similarity: 5
Query Match: 5
DB:
                                                                Score:
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 11115
                         Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                   Sequence 889, Application US/09991936
; Sequence 889, Application US20030073827A1
; Sequence 889, Application No. US20030073827A1
; GENERAL INFORMATION:
; APPLICANT: Brandt, Kevin S.
; APPLICANT: Gaines, Parrick J.
; APPLICANT: Stinchcomb, Dan T.
; APPLICANT: Stinchcomb, Dan T.
; APPLICANT: Stinchcomb, Dan T.
; TITLE OF INVENTION: FLEA HEAD, HINDCUT AND MALPICHIAN TUBULE
; TITLE OF INVENTION: NUCLEIC ACID MOLECULES, PROTEINS AND USES THEREOF
; TITLE OF INVENTION: NUMBER: US/09/991,936
; CURRENT FILING DATE: 2001-11-21
; PRIOR PILING DATE: 2000-04-07
; PRIOR FILING DATE: 2000-04-09
; NUMBER OF SEQ ID NOS: 1959
; SOFTWARE: PATENTIN Ver. 2.1
; SEQ ID NO 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
US-09-991-936-1638

i Sequence 1638, Application US/0991936

j Sequence 1638, Application No. US20030073827A1

i GENERAL INFORMATION:
    APPLICANT: Brandt, Kevin S.
    APPLICANT: Gained, Dan T.
    APPLICANT: Stinchcomb, Dan T.
    APPLICANT: Stinchcomb, Dan T.
    APPLICANT: Stinchcomb, Dan T.
    APPLICANT: Wisnewski, Nancy
    TITLE OF INVENTION: FLEA HEAD, NERVE CORD, HINDGUT AND MALPIGHIAN TUBULE
    TITLE OF INVENTION: NUMBER: US/09/991,936
    CURRENT APPLICATION NUMBER: US/09/991,936
    CURRENT FILING DATE: 2000-04-07
    PRIOR APPLICATION NUMBER: G0/128,704
    PRIOR PILING DATE: 1999-04-09
    NUMBER OF SEO ID NOS: 1959
    SOFTWARE: Patentin Ver. 2.1
    SEO ID NO 1638
    LENGTH: 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21 ATGAAATTCGCAGTAGCAATTTTGGCCCTGGCCCTGTGTGGCTTTGGCATCAGCT 74
                                                                                                       2764 CTTCAACAAAATCATGCTTTAGTTACTTTGGTAGCAAAAACCTTGCAACC 2814
                                                                                1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x US-09-991-936-889 (1-549)
                                       US-10-081-935-2 (1-18) x US-10-293-582-2 (1-9372)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Ctenocephalides felis
US-09-991-936-889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA CLENOCEPHALIDES FELIS US-09-991-936-1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40.4
43.00
72.22$
50.00$
52.44$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                     RESULT 8
US-09-991-936-889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
Pred. No.:
```

ò g

```
1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                           21 ATGAAATTGGCAGTAGCAATTTTGGGCCTGGCCTGTGGTTTGGCATCAGCT 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-894-844-66

Sequence 66, Application US/09894844

Sequence 66, Application US/09894844

Sequence 66, Application US/09894844

Sequence 66, Application US/09894844

SEGUENCH 1967-1967-1975

APPLICANT: Small, Peter 1971-1976-1976

TITLE OF INVENTION: Michael A.

TITLE OF INVENTION: Whe M. Tuberculosis Complex

TITLE OF INVENTION: Whe M. Tuberculosis Complex

TITLE OF INVENTION: WHERE: US/09/894,844

CURRENT FILING DATE: 2001-06-27

PRIOR PILING DATE: 1999-05-25

PRIOR PILING DATE: 1999-05-25

PRIOR FILING DATE: 1999-05-25

NUMBER OF SEQ ID NOS: 137

SEQ ID NO 66

SEQ ID NO 66

LENGTH: 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78-09-769-734-49/c

78-09-769-734-49/c

78-09-769-769-734-79/c

78-09-769-769-734-79/c

78-09-769-79-79-79/c

78-09-769-79-79/c

78-09-79-79-79/c

78-09-79/c

78-
    0 0 4 0 0 0
0
Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                 US-10-081-935-2 (1-18) x US-09-991-936-1638 (1-549)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18) x US-09-894-844-66 (1-720)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56.6
43.00
100.00%
90.91%
52.44%
40.4
43.00
72.22$
50.00$
52.44$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA; Cuberculosis US-09-894-844-66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: M. carbonacea
FEATURE:
NAME/KEY: misc_feature
```

```
NESULT 18.

NESULT 18.

NESULT 18.

NESULT 18.

Sequence 68, Application US/09712363

APPLICANT: Eisenberg, David

APPLICANT: Marcotte Edward M.

TITLE OF INVENTION: DAVEL: 2000-11.

TITLE OF INVENTION: INTERACTIONS OF PROTEINS BY COMPARATIVE ANALYSIS

FILE REFERENCE: 07419-03201

CURRENT FILING DATE: 2000-12.8

PRIOR PILING DATE: 2000-01.28

PRIOR APPLICATION NUMBER: 60/17,844

PRIOR APPLICATION NUMBER: 60/17,844

PRIOR APPLICATION NUMBER: 60/134,093

PRIOR PILING DATE: 1999-02-01

PRIOR PILING DATE: 1999-05-14

PRIOR PILING DATE: 1999-101-12

PRIOR PILING DATE: 1999-11-12

PRIOR PILING DATE: 1999-11-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2632
8
3
1
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1870 TCCCACTCCGCTGTTTCCCTCGTTGCCGCAGGACTT 1905
                                Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                     4 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                          US-10-081-935-2 (1-18) x US-10-108-605-36 (1-2632)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x US-09-712-363-68 (1-3042)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Sequence 12310, Application US/10198846; Publication No. US2030099974A1
GENERAL INFORMATION: APPLICANT: Lillie, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA
; ORGANISM: Mycobacterium tuberculosis
US-09-712-363-68
                                                       42.00
91.67%
66.67%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        536
42.00
82.35%
52.94%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-198-846-12310/c
               Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                 Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Stam, Lynn
APPLICANT: Bachmann, Jane
APPLICANT: Ramdarr, Kim
TITLE OF INVENTION: NUCLEIC ACID SEQUENCES FROM DROSOPHILA MELANOGASTER THAT ENCODE
TITLE OF INVENTION: PROTEINS ESSENTIAL FOR LARVAL VIABILITY AND USES THEREOF
FILE REFERENCE: 311318
CURRENT APPLICATION NUMBER: US/10/108,605
CURRENT FILING DATE: 2002-03-27
PRIOR APPLICATION NUMBER: US 60/761,142
PRIOR FILING DATE: 2000-01-14
PRIOR FILING DATE: 2000-01-14
SPRIOR FILING DATE: 2000-01-14
NUMBER OF SEQ ID NOS: 361
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 36
LENGTH: 2632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11115
12
LOCATION: (8)...(1207)

OTHER INFORMATION: ORF 41 (positive strandedness)
OTHER INFORMATION: ORF 41 (positive strandedness)
NAME/KEY: misc feature
LOCATION: (1213)..(2331)
OTHER INFORMATION: ORF 42 (positive strandedness)
NAME/KEY: misc feature
LOCATION: (3623)..(4343)
OTHER INFORMATION: ORF 43 (positive strandedness)
NAME/KEY: misc feature
LOCATION: (3623)..(4343)
OTHER INFORMATION: ORF 44 (positive strandedness)
NAME/KEY: misc feature
LOCATION: (5107)..(5107)
OTHER INFORMATION: ORF 45 (negative strandedness)
NAME/KEY: misc feature
LOCATION: (5177)..(6094)
OTHER INFORMATION: ORF 46 (negative strandedness)
NAME/KEY: misc feature
LOCATION: (6271)..(6370)
OTHER INFORMATION: ORF 47 (negative strandedness)
NAME/KEY: misc feature
LOCATION: (7703)..(8760)
OTHER INFORMATION: ORF 48 (negative strandedness)
NAME/KEY: misc feature
LOCATION: (7703)..(8760)
OTHER INFORMATION: ORF 48 (negative strandedness)
NAME/KEY: misc feature
LOCATION: (7703)..(8760)
OTHER INFORMATION: ORF 49 (negative strandedness)
COTHER INFORMATION: ORF 49 (negative strandedness)
COTHER INFORMATION: ORF 49 (negative strandedness)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-09-769-734-49 (1-11115)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence 36, Application US/10108605; Publication No. US/20020160934A1 GENERAL INFORMATION: APPLICANT: Broadus, Julie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
CRGANISM: Drosophila melanogaster
US-10-108-605-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.71e+03
43.00
63.64%
54.55%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7764 ĊŤĠĠĊĊ 7759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15 LeuAla 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
US-10-108-605-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
```

ò a ò

```
; TYPE: DNA
; ORGANISM: Corynebacterium glutamicum
US-09-738-626-3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114
41.00
76.47$
47.06$
50.00$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 4458
LENGTH: 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                        쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
APPLICANT: Xu, Yongyao
APPLICANT: Wang, Youzhen
APPLICANT: Steinmann, Kathleen
APPLICANT: Steinmann, Kathleen
TITLE OF INVENTION: NOVEL GENES, COMPOSITIONS, KITS, AND METHODS
TITLE OF INVENTION: THERAPY OF BREAST CANCER
FILE REFERENCE: MRI-049
CURRENT APPLICATION NUMBER: US/10/198,846
CURRENT FILING DATE: 2002-07-18
PRIOR APPLICATION NUMBER: 60/306,220
PRIOR APPLICATION NUMBER: 60/306,220
SRIOR FILING DATE: 2001-07-18
NUMBER OF SEQ ID NOS: 14084
SEQ ID NO 12310
LENGTH: 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 975, Application US/0991936
Publication No. US20030073827A1
GENERAL INFORMATION:
APPLICANT: Brandt, Kevin S.
APPLICANT: Gaines, Patrick J.
APPLICANT: Wisnewski, Nancy
ITLE OF INVENTION: FLEA HEAD, NERVE CORD, HINDGUT AND MALPIGHIAN TUBULE
ITILE OF INVENTION: MUCLEIC ACID MOLECULES, PROTEINS AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 HisAlaLeulleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               498
111
33
12
                                                                                                                                                                                                                                                                                                                                                                                                     251
9
1
1
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122 caceceargarcerectreceecececagecrerereger
                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-10-198-846-12310 (1-251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18) x US-09-991-936-975 (1-498)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/991,936
CURRENT FILING DATE: 2001-11-21
PRIOR APPLICATION NUMBER: US/09/543,668
PRIOR FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: 60128,704
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 1959
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 975
LENGTH: 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                        v
                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: misc_feature
LOCATION: 1
OTHER INFORMATION: n = A,T,C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
; ORGANISM: Ctenocephalides felis
US-09-991-936-975
                                                                                                                                                                                                                                                                                                                                                                                                     37.6
41.00
71.43%
64.29%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88.4
41.00
68.75%
68.75%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
US-09-991-936-975/c
                                                                                                                                                                                                                                                                                                                                                       US-10-198-846-12310
                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
RESULT 17
US-10-198-846-4458/C
; Sequence 4458, Application US/10198846
; Publication No. US2003009974A1
; GENERAL INFORMATION:
; APPLICANT: Lillie, James
; APPLICANT: Ari, Yongyao
; APPLICANT: Steinmann, Kathleen
; APPLICANT: Steinmann, Kathleen
; TITLE OF INVENTION: NOVEL GENES, COMPOSITIONS, KITS, AND METHODS
; TITLE OF INVENTION: THERAPY OF BREAST CANCER
; FILE REFERENCE: MRI-049
; FULNG DATE: 2002-07-18
; PRIOR APPLICATION NUMBER: 60/306,220
; PRIOR FILING DATE: 2001-07-18
; NUMBER OF SEQ ID NOS: 140044
; SCOTTAND AND SECONDE OF THE APPLICATION NUMBER OF SEQ ID NOS: 140044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-09-738-626-3337 (1-609)
i Sequence 3337, Application US/09738626
; Publication No. US20020197605A1
; General No. US20020197605A1
; GENERAL INFORMATION:
; APPLICANT: NAXGAWA, SATOSHI
; APPLICANT: MIZOGUCHI, HIROSHI
; APPLICANT: ANDO, SEIKO
; APPLICANT: ANDO, SEIKO
; APPLICANT: TYPEISHI, MIXERO
; APPLICANT: YOKOI, HARUHIKO
; APPLICANT: YOKOI, HARUHIKO
; APPLICANT: YOKOI, HARUHIKO
; APPLICANT: YOKOI, HARUHIKO
; APPLICANT: SENOH, AKIHRO
; APPLICANT: SENOH, AKIHRO
; APPLICANT: OZAKI, AKIO
; APPLICANT: OZAKI, AKIO
; TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
; FILE REFERENCE: 249-125
; CURRENT APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 2000-12-18
; PRIOR FILING DATE: 2000-12-16
; PRIOR FILING DATE: 2000-04-07
; PRIOR FILING DATE: 2000-08-03
; NUMBER OF SEQ ID NOS: 7059
; SOFTWARE: PATENTIN VET: 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
```

```
480 CTGCCTTTGAGCCACCAGCTCGTGCTTCTCCTGGCAATGGGTCTGGTCACAGCA 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Watson, James D.
APPLICANT: Strachan, Lorna
APPLICANT: Steeman, Matthew
APPLICANT: Steeman, Matthew
APPLICANT: Orlust, Rene
APPLICANT: Murison, James G.
APPLICANT: Mumble, Krishanand D.
TITLE OF INVENTION: Compositions Isolated From Skin Cells
TITLE OF INVENTION: Compositions Isolated From Skin Cells
TITLE OF INVENTION: and Methods for Their Use
FILE REPREMENTE: 11000.1011c4U
CURRENT APPLICATION NUMBER: US/09/866,050A
CURRENT FILING DATE: 2001-05-24
NUMBER OF SEQ ID NOS: 725
SOTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 584
LEWOTH: 2123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-2 (1-18) x US-10-156-761-4387 (1-1722)
                                                                                                                                                APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: SHIKAWA, JUN
APPLICANT: SHIRA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: HATTORI, WOSHIVKI
APPLICANT: HATTORI, WASAHIRA
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR FILING DATE: 2001-05-30
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 4387
                                                                                      ; Sequence 4387, Application US/10156761; Publication No. US20030119018A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 584, Application US/09866050A
; Publication No. US20030040471A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              415
41.00
86.67%
60.00%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              539
41.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; LOCATION: (1)..(1722)
US-10-156-761-4387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                   US-10-156-761-4387/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 20
US-09-866-050A-584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-866-050A-584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/10137473
; Sequence 3, Application US/10137473
; Publication No. US20030104419A1
; GENERAL INFORMATION:
; APPLICANT; GOULD-Rottberg
; APPLICANT; Reatelli
; TITLE OF INVENTION: DIFFERENTIAL GENE EXPRESSION
; TITLE OF INVENTION: DIFFERENTIAL GENE EXPRESSION
; TITLE OF INVENTION: DIFFERENTIAL GENE EXPRESSION
; TILE OF INVENTION: DIFFERENTIAL GENE EXPRESSION
; TILE OF INVENTION: DIFFERENTIAL GENE EXPRESSION
; TILE OF INVENTION: DIFFERENTIAL GENE EXPRESSION
; FILE REFRENCE: 15966-548
; CURRENT FILING DATE: 2000-04-30
; PRIOR FILING DATE: 2000-04-19
; PRIOR FILING DATE: 1999-04-20
; PRIOR FILING DATE: 2000-03-30
; PRIOR FILING DATE: 2000-03-30
; NUMBER OF SEQ ID NOS: 63
; SOFTWARE: PALENTIN VEY: 2.0
; SEQ ID NO 3
; LENGTH: 17-19
                                     NAME/KEY: misc_feature
LOCATION: 7, 15, 16, 22, 24, 27, 33, 37, 40, 80, 81, 85, 474, 484,
LOCATION: 501, 512, 527, 543, 550, 551, 553, 555, 564, 567, 584, 587,
LOCATION: 591, 592, 617, 618, 619, 623, 633, 634, 640, 642, 643, 651,
LOCATION: 655, 659, 660, 664, 666, 667, 673, 674, 683, 684, 686
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                PEATURE:
NAME/KEY: misc_feature
LOCATION: 689, 699, 699, 700, 703, 713, 719, 724, 726, 727, LOCATION: 689, 699, 731, 745, 746, 748, 751, 752, 753, 756, 757, LOCATION: 700, 762, 764, 766, 773, 780, 782, 783, 792, 799, 800, LOCATION: 812, 813, 814, 823, 826, 819, 847, 848, 857, 861, 869, 800, OTHER INFORMATION: 1 A.T., C or G BARTINE:
NAME/KEY: misc_feature
LOCATION: 870, 872, 874, 881, 882, 889, 890, 891
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1218
8
4
6
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           894
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-081-935-2 (1-18) x US-10-198-846-4458 (1-894)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-2 (1-18) x US-10-137-473-3 (1-1218)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
41.00
71.43%
64.29%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               269
41.00
66.67
44.44
50.00
14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Murinae gen. sp.
US-10-137-473-3
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-198-846-4458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 18
US-10-137-473-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
DB:
```

ò

Indels: Gaps: 2123 8

Length: Matches:

SAKAKI, YOSHIYUKI

```
ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                 810 CTGCCTTTGAGCCACCACCACCTGCTTCTCCTGGCAATGGGTCTGGTCACAGCA 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MetGlnPheSerHisAlaLeulleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                               Sequence 584. Application US/10152661
CENERAL INFORMATION:
APPLICANT: Watson, James D.
APPLICANT: Watson, James D.
APPLICANT: Strachan, Lorna
APPLICANT: Strachan, Lorna
APPLICANT: Strachan, Lorna
APPLICANT: Strachan, James G.
APPLICANT: Murison, James G.
APPLICANT: John Williams: G.
APPLICANT: Murison, G.
APPLICANT: John Williams: G.
APPLICANTING MATE: JOH-G.
APPLICANT: JOH-G.
      4 0 0 0
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative:
Mismatches:
Indels:
                                                                                                                                                            US-10-081-935-2 (1-18) x US-09-866-050A-584 (1-2123)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-081-935-2 (1-18) x US-10-152-661-584 (1-2123)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Sequence 918, Application US/10156761
; Publication No. US20030119018A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HROSHI
APPLICANT: SHIBA, TADAYOSHI
66.67%
44.44%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41.00
66.67$
44.44$
50.00$
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:

    TYPE: DNA
    ORGANISM: Mouse
US-10-152-661-584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-156-761-918
                                                                                                                                                                                                                                                                                                                                                                                 US-10-152-661-584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
Pred. No.:
                                                               Query Match:
DB:
                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
1168 CTGCAACTGACACACCGCTTGCTTCGAGGGGGGGGTGGCCGC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3309400
8
5
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-10-156-761-918 (1-2484)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INCUKRALIUM;
JOHNEAN INCUKRALIUM;
JOHNIAN MIZOGUCHI, HIROSHI
JOHNIAN MIZOGUCHI, MIKIRO
JOHNIAN MIZOGUCHI, KEIKO
JOHNIAN MIZOGUCHI, HARUHIKO
JOHNIAN MIZOGUCHI, HARUHIKO
JOHNIAN MIZOGUCHI
JOHNIAN MIZOGUCHI
JOHNIAN MIZOGUCHI
JOHNIAN MIZOGUCHI
JOHNIAN APPLICATION NUMBER: US/99/138,626
CURRENT FILING DATE: 2000-12-18
JOHNIAN APPLICATION NUMBER: US/99/13-16
JOHNIAN MIZOGUCHI
JOHNIAN MI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-06-30
PRIOR FILING DATE: 2001-06-30
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 918
LENGTH: 2484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Corynebacterium glutamicum
US-09-738-626-1
                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 1, Application US/09738626
; Publication No. US20020197605A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41.00
70.59%
47.06%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3e+06
41.00
76.47%
47.06%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; LOCATION: (1)..(2484)
US-10-156-761-918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3309400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-738-626-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score:
```

13

σ

8

```
US-10-190-305A-70/c

Sequence 70, Application US/10190305A

Publication No. US20030198621A1

GENERAL INFORMATION:

APPLICANT: ZUR MEGEDE, Jan

APPLICANT: LARNETT, Susan

APPLICANT: LARNETT, Susan

TITLE OF INVENTION: POLYNUCLEOTIDES ENCODING ANTIGENIC HIV TYPE B AND/OR

TITLE OF INVENTION: TYPE C POLYPEPTIDES, POLYPEPTIDES AND USES THEREOF

FILE REFERENCE: 2302-18702 / 18702.002

CURRENT APPLICATION NUMBER: US/10/190,305A

CURRENT FILING DATE: 2002-07-05

NUMBER OF SEQ ID NOS: 93

SOFTWARE: PALENTIN VEY: 2.0

LENGTH: 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-190-305A-71/C

i Sequence 71, Application US/10190305A

j Publication No. US20030198621A1

g GENERAL INFORMATION:
 APPLICANT: ZUR MEGEDE, Jan
 APPLICANT: LIAN, YING
 TITLE OF INVENTION:
 TITLE OF INVENTION: TYPE C POLYPEPTIDES, POLYPEPTIDES AND USES THEREOF
 TITLE OF INVENTION: TYPE C POLYPEPTIDES, POLYPEPTIDES AND USES THEREOF
 CURRENT APPLICATION NUMBER: US/10/190,305A
 CURRENT FILING DATE: 2002-07-05
 NUMBER OF SEQ ID NOS: 93
 SOFFWARE: PATENTIN VEF. 2.0

SEQ ID NO 71
                    ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. US20010051335A1 700356446H1
US-09-294-093B-5360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: Description of Artificial Sequence: OTHER INFORMATION: TatC22Exonl_2_TV1_C_ZAopt
                                                                                                                                                                                                                                                                                                                                                             153 ATCCAATTGAATCATGCCCTTCTTGCTCTTGTCAAAGCT 115
                                                                                                                                                                                                                                                                                                                                 1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18) x US-09-294-093B-5360 (1-228)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18) x US-10-190-305A-70 (1-309)
                                                                                                                                                                                                                                                Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Artificial Sequence
                                                                                                                               52.5
40.00
84.62%
61.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76.7
40.00
78.57
57.14
48.78
                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                            Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-190-305A-70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No.
                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                   <u>`</u>
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Lalgudi, Raghunath, V.

APPLICANT: Ito, Laura, Y.

APPLICANT: Sherman, Bradley, K.

TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN TASSEL.

FILE REFERENCE: PL-0009 US.

CURRENT APPLICATION NUMBER: US/09/294,093B

CURRENT FILING DATE: 1999-04-16

PRIOR APPLICATION NUMBER: 60/082,567

PRIOR APPLICATION NUMBER: 60/082,567

PRIOR APPLICATION NUMBER: 60/082,567

NUMBER OF SEQ ID NOS: 6207

SOFTWARE: PERL Program

LENTH: 228

TYPE: T.:
                                                                                                            32183392 CTTCAGATCGGATACGCCATCATCGGTATCCGCGCAGCAGGTCTCGCCGCT 3218442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1126427 CTGCAACTGACACCGCTTGCTGCACTTCGTCGAGGCGGGGCTGGCCGCC 1126477
                                                                              1 MetGlnPheSerHisAlaLeulleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
                                       US-10-081-935-2 (1-18) x US-09-738-626-1 (1-3309400)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; NAME/KEY: misc_feature
... LOCATION: (4187715)
; OTHER INFORMATION: a, t, c, g, other or unknown
US-10-156-761-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-2 (1-18) x US-10-156-761-1 (1-9025608)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
                                                                                                                                                                                                                                                                         APPLICANT: ONURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: ISHIKAWA, JUN
APPLICANT: BHIRAWA, JUN
APPLICANT: SHIRAWA, HIROSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: BATANOSHI
APPLICANT: BATANOSHI
APPLICANT: ONUREN: 1054918
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR PILING DATE: 2001-05-30
PRIOR PILING DATE: 2001-05-30
PRIOR PILING DATE: 2001-05-30
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                ; Sequence 1, Application US/10156761; Publication No. US20030119018A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.25e+06
41.00
70.59%
47.06%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 25
US-09-294-093B-5360/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 9025608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE
```

g

ò

```
d
                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 28
US-10-027-632-66199/C
; Sequence 66199, Application US/10027632
; Publication No. US20030204075A9
; GENERAL INFORMATION:
APPLICATION BANG, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: David G.
TITLE OF INVENTION: David G.
TITLE OF INVENTION: DAVIDER: US/10/027,632
CURRENT APPLICATION NUMBER: US 60/218,006
; PRIOR PILING DATE: 2000-07-12
; PRIOR PELICATION NUMBER: US 60/198,676
; PRIOR PILING DATE: 2000-07-12
; PRIOR PILING DATE: 2000-07-29
; PRIOR PILING DATE: 2000-03-29
; PRIOR PILING DATE: 2000-03-29
; PRIOR PILING DATE: 1999-11-23
; PRIOR PILING DATE: 1999-109-28
; PRIOR PILING DATE: 1999-09-28
; PRIOR PILING DATE: 1999-09-80
; PRIOR PILING DATE: 1999-08-09
; PRIOR PILING DATE: 1999-08-09
; NUMBER OF SEQ ID NOS: 125720
; SOFTWARE: FABSEEQ FOR WINDOWS VERSION 4.0
                                                                       ; OTHER INFORMATION: Description of Artificial Sequence: description US-10-190-305A-71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                        273 CACCTTCTTCTTGCTCTCGCTGCCGGTGCTGTCGCCGCG 232
                                                                                                                                                                                                                                                                                                                               S HisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                         800
800
00
00
00
                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-10-027-632-66199 (1-406)
                                                                                                                                                                                                                                                                                          US-10-081-935-2 (1-18) x US-10-190-305A-71 (1-309)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (1)...(406)
OTHER INFORMATION: n = A,T,C or G
                TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                     76.7
40.00
78.57$
57.14$
48.78$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              108
40.00
75.00%
56.25%
48.78%
                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFURMATIOUS-10-027-632-66199
                                                                                                                                   Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
Pred. No.:
LENGTH: 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             m
                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                               ઠે
```

RESULT 29

```
JEGUERAL INFORMATION:

JEGUERAL APPLICATION NUMBER: US 60/218,006

JEGUERAL FILING DATE: 2000-07-129

JEGUERAL APPLICATION NUMBER: US 60/193,483

PRIOR FILING DATE: 2000-03-29

JEGUERAL APPLICATION NUMBER: US 60/185,218

JEGUERAL INFORMATE: 12000-03-29

JEGUERAL INFORMATE: 12000-03-29

JEGUERAL JEGUERATION NUMBER: US 60/167,363

JEGUERAL JEGUERATION NUMBER: US 60/156,358

JEGUERAL JEGUERATION NUMBER: US 60/156,358

JEGUERAL JEGUERATION NUMBER: US 60/146,002

JEGUERAL J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4621, Application US/09867701
Facence 4621, Application US/09867701
Facence No. US20020132237A1
Facence No. US20020132237A1
Facence No. US20020132237A1
Facence No. US2002013237A1
Facence No. US2002013237A1
Facence No. USA0416, Paul A.
FAPLICANT: Jones, Robert
FAPLICANT: Jones, Robert
FAPLICANT: Jones, Robert
FAPLICANT: Jones, Robert
FILE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
FILE REFERENCE: 210121.497
FURRENT FILING DATE: 2001-05-29
FOURBENT FILING DATE: 2001-05-29
FOURBENT FILING DATE: 2001-05-29
FOURBENT FILING DATE: 2001-05-29
FOURBENT FILING DATE: Applicant Application A.0
FERGINE FASTSEQ for Windows Version 4.0
FERGINE NA
FOURBENT FILING DATE: TYPE: DNA
FOURBENT FILING DATE: Applicant A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        436
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-10-027-632-66199 (1-406)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40.00
75.00$
56.25$
48.78$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
40.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature LOCATION: (1)...(406)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (1)... (406)
OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
Percent Similarity;
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-027-632-66199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-867-701-4623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
Pred. No.:
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 66199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
```

```
Sequence 36340, Application US/10027632

Publication No US20030204075A9

GENERAL INFORMATION:

TITLE OF INVENTION: Identification and Mapping of Single Nucleotide

TITLE OF INVENTION: Polymorphisms in the Human Genome

TITLE OF INVENTION: Polymorphisms in the Human Genome

CURRENT APPLICATION NUMBER: US/10/027,632

CURRENT APPLICATION NUMBER: US 60/218,006

PRIOR APPLICATION NUMBER: US 60/218,006

PRIOR PILING DATE: 2000-07-12

PRIOR PILING DATE: 2000-07-12

PRIOR PELLING DATE: 2000-03-29

PRIOR APPLICATION NUMBER: US 60/193,483

PRIOR APPLICATION NUMBER: US 60/195,218

PRIOR APPLICATION NUMBER: US 60/185,218

PRIOR APPLICATION NUMBER: US 60/185,318

PRIOR PILING DATE: 2000-03-29

PRIOR PILING DATE: 2000-03-29

PRIOR PILING DATE: US 60/185,318

PRIOR PILING DATE: US 60/186,358

PRIOR FILING DATE: 1999-11-23

PRIOR FILING DATE: 1999-10-28
                                                                                                                                                                                                                                                                                                       Sequence 36266, Application US/09918995
; Publication No. US20030073623A1
; GENERAL INFORMATION:
; TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES OBTAINED
; TITLE OF INVENTION: RPM VARIOUS CDNA LIBRARIES
; TITLE OF INVENTION: RPM VARIOUS CDNA LIBRARIES
; FILE REFERENCE: 2041.756
; CURRENT FILING DATE: 2001-07-30
; PRIOR APPLICATION NUMBER: US/09/918,995
; PRIOR APPLICATION NUMBER: US/09/215,076
; PRIOR APPLICATION NUMBER: US/09/215,076
; RUMBER OF SEQ ID NOS: 38054
; SOFTHARE: Featle 1999-01-20
; SOFTHARE: Peatle OF Windows Version 3.0
; SEQ ID NO 36266
                                                                                                                                                                  390 AGCCATCTCTGATCCTCTTGAAAGCGGCAGGCATCGCT 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-09-918-995-36266 (1-445)
                                                                                                                       US-10-081-935-2 (1-18) x US-09-867-701-4623 (1-436)
                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(445)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
40.00
76.92%
69.23%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Homo sapiens
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 32
US-10-027-632-36340/c
                                                                                                                                                                                                                                                                                               US-09-918-995-36266/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHEK INFORMATIOUS-09-918-995-36266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
DB:
                                                                                                                                                                     ò
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
GENERAL INCOMENTION:

APPLICANT: Wang, David G.

TITLE OF INVENTION: Ledentification and Mapping of Single Nucleotide
TITLE OF INVENTION: Ledentification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-04-20
PRIOR PLING DATE: 2000-04-20
PRIOR PLING DATE: 2000-03-24
PRIOR FILING DATE: 2000-03-24
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-10-28
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-08
PRIOR FILING DATE: 1999-09-08
PRIOR FILING DATE: 1999-08-09
PRIOR PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR PRIOR PRIOR DATE: 1999-08-09
PRIOR FILING DATE: 1999-08-09
PRIOR PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR PRIOR PRIOR DATE: 1999-08-09
PRIOR D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         211 TITICGAATGCTCTATGGCTTTACTTGGGGGTGGTCATTGCTCAGCT 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x US-10-027-632-36340 (1-467)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 36340
LENGTH: 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-027-632-36340/c
; Sequence 36340, Application US/10027632
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature;
COCATION: (1)...(467)
COTHER INFORMATION: n = A,T,C or G
US-10-027-632-36340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (1)...(467)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      128
40.00
75.00%
56.25%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128
40.00
75.00%
56.25%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                ORGANISM: Human
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-027-632-36340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
```

US-10-081-935-2 (1-18) x US-10-027-632-36340 (1-467)

```
RESULT 37
                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                      US-10-027-632-42872

Sequence 42872, Application US/10027632

Sequence 42872, Application US/10027632

Sequence 42872, Application US/10027632

TUTLE NORMATION:
TITLE OF INVENTION: Polymorphisms in the Human Genome
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129

CURRENT APPLICATION NUMBER: US/10/027,632

CURRENT PILING DATE: 2002-04-30

PRIOR FILING DATE: 2000-01-20

PRIOR FILING DATE: 2000-01-20

PRIOR PILING DATE: 2000-04-20

PRIOR PILING DATE: 2000-03-24

PRIOR PLING DATE: 2000-03-24

PRIOR PLING DATE: 2000-03-24

PRIOR APPLICATION NUMBER: US 60/198,218

PRIOR PLING DATE: 2000-03-24

PRIOR PLING DATE: 2000-03-24

PRIOR PLING DATE: 1999-11-23

PRIOR PILING DATE: 1999-11-33
              211 TTTTCGAATGCTCTTATGGCTTTACTTGGGGGTGGTCATTGCTCAGCT 164
3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        509
3
1
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-10-027-632-42872 (1-509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTCTCATTCCTTAGTTGCAATAGTAGGGGCC 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 PheSerHisAlaLeuIleAlaLeuValAlaAla 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40.00
90.91%
63.64%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-42872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
δ
```

```
HENCHALL INFORMATION:

JAPPLICANT: Wang, David G.

TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
FILE OF INVENTION: PolyMorphisms in the Human Genome
FILE REFERENCE: 108827.129

CURRENT PILING DATE: 2002-04-30

PRIOR APPLICATION NUMBER: US 60/218,006

PRIOR PRIOR PILING DATE: 2000-07-12

PRIOR FILING DATE: 2000-04-20

PRIOR FILING DATE: 2000-04-20

PRIOR FILING DATE: 2000-03-29

PRIOR FILING DATE: 2000-03-29

PRIOR FILING DATE: 1090-03-29

PRIOR FILING DATE: 1090-03-29

PRIOR FILING DATE: 1090-03-29

PRIOR FILING DATE: 1999-09-28

PRIOR PRIOR FILING DATE: 1999-09-28

PRIOR FILING DATE: 1999-09-28

PRIOR PRIOR APPLICATION NUMBER: US 60/146,002

PRIOR APPLICATION NUMBER: US 60/146,002

PRIOR APPLICATION NUMBER: US 60/146,002

PRIOR FILING DATE: 1999-09-08

PRIOR FILING DATE: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                     509
7
1
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        512
7
7
3
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                      Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-2 (1-18) x US-10-027-632-281505 (1-512)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-2 (1-18) x US-10-027-632-42872 (1-509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
PRIOR FILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
LENGTH: S09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 281505, Application US/10027632; Publication No. US20030204075A9; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                               40.00
90.91%
63.64%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144
40.00
80.00%
46.67%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-027-632-281505
                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                           US-10-027-632-42872
                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
```

```
71.43$
57.14$
48.78$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40.00
83.33%
66.67%
48.78%
  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
CRGANISM: Human
US-10-027-632-185077
                                                                                                                                                                                                                                                      US-10-027-632-185077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
                                                   GENERAL INFORMATION:

GENERAL INFORMATION:

TITLE OF INVENTION: Identification and Mapping of Single Nucleotide

TITLE OF INVENTION: Polymorphisms in the Human Genome

FILE REFERENCE: 108627.129

CURRENT APPLICATION NUMBER: US/10/027,632

CURRENT APPLICATION NUMBER: US 60/218,006

PRIOR APPLICATION NUMBER: US 60/218,006

PRIOR FILING DATE: 2000-07-12

PRIOR FILING DATE: 2000-04-20

PRIOR FILING DATE: 2000-03-24

PRIOR FILING DATE: 2000-03-24

PRIOR FILING DATE: 2000-02-4

PRIOR FILING DATE: 1999-11-23

PRIOR FILING DATE: 1999-11-23

PRIOR APPLICATION NUMBER: US 60/156,358

PRIOR FILING DATE: 1999-11-23

PRIOR FILING DATE: 1999-09-28

PRIOR FILING DATE: 1999-09-28

PRIOR FILING DATE: 1999-09-28

PRIOR FILING DATE: 1999-09-28

NUMBER OF SEQ ID NOS: 325720

NUMBER OF SEQ ID NOS: 325720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 30945, Application US/09918995; Publication No. US20030073623A1; GENERAL INFORMATION:
CENERAL INFORMATION:
TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES OBTAINED TITLE OF INVENTION: FROM VARIOUS CDNA LIBRARIES; FILE REFERENCE: 20411-756; CURRENT APPLICATION NUMBER: US/09/918,995; CURRENT FILING DATE: 2001-07-30; PRIOR APPLICATION NUMBER: US/09/235,076; PRIOR FILING DATE: 1999-01-20; NUMBER OF SEQ ID NOS: 38054; SOFTHARE: PREESEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         513
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-10-027-632-281505 (1-512)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
US-10-027-632-281505; Application US/10027632; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (1).7.(513)
OTHER INFORMATION: n = A,T,C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40.00
80.00%
46.67%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-027-632-281505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 38
US-09-918-995-30945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-918-995-30945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 281505
LENGTH: 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 30945
LENGTH: 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ouery Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
```

Search completed: November 13, 2003, 14:12:16 Job time : 984 secs E. maxima 230 kDa Eimeria maxima 250 Eimeria maxima 250 E. maxima immunodo The sorraphen biosy Nucleotide sequenc

Mitomycin biosynth Drosophila melanog Drosophila melanog Drosophila melanog Complete Mitomycin Human GDP-mannose Human ORF112 codin

Fusarium oxysporum Fusarium oxysporum

Fusarium oxysporum Fusaric acid resis

Bhatia A;

Mitcham JL, Wang SS, , Jen S, Carter D;

Skeiky YAW, Persing DH, M L'maisonneuve J, Zhang Y,

Score

Result No.

25.6 25.6 25.6 25.6 24.8 24.8 24.8 24.6 24.6

12 m 4 m 9 r m

υυ υυ

Metalloprotease co

Drosophila melanog **Trametes versicolo** 945 metalloproteas

S. atroolivaceus l pCON3 deletion mut Human ORFX polynuc Corn auxin transpo

C glutamicum codin Human polynucleoti

Human immune/haema Human cDNA differe Rice auxin transpo C glutamicum codin Corynebacterium gl

Drosophila melanog Aspergillus oryzae

DNA encoding novel

Drosophila melanog

```
SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; dermatological; osteopathic; neuroprotectant; ds.
                                                                                                                                                                                                                                                                                Propionibacterium acnes immunogenic protein encoding DNA #177.
                                                                                                                                                                                                                     ALIGNMENTS
                      AAS73006
AAK70862
ABK83564
AAA94724
AAH68302
AAF71300
ABZ52974
ABZ222976
                                                                      ABZ22984
AAV05287
AAA58471
AAH68534
ABZ11723
                                                                                                       AAD38151
ABN20845
AAA94737
AAC55847
                                                                                                                                                                   ABL26959
ABL60268
AAT05530
AAT05529
AAT40133
                                                                                                                             ABL13923
ABL08443
                                                                                                                                         ABL13922
ABL08442
                                                                                                                                                         ABX30608
                                                                                                                                                               ABQ98305
               AAF1229
                                                                                                                                                                                                                                               AAS59682 standard; DNA; 1006 BP.
                                                                                                                                                                                                                                                                                                                                                                 21-APR-2000; 2000US-199047P. 02-JUN-2000; 2000US-208841P. 07-JUL-2000; 2000US-216747P.
 20-APR-2001; 2001WO-US12865
                                                                                                                                                                                                                                                                     (first entry)
                                          7007
7077
7077
7077
7987
7990
49377
58857
     3772
3772
695
5484
                                                                                             1415
135638
                                                                                                        145
450
855
2466
2840
5736
6782
9577
18034
                                                                                                                                                                   867
1563
1899
2052
2052
2052
5437
                                                                                                                                                        271
450
                                                                                                                                                                                                                                                                                                                       Propionibacterium acnes.
                                                                                                                                                                                                                                                                                                                                                                                       (CORI-) CORIXA CORP.
WO200181581-A2
                                                                                                                                                                                                                                                                     13-FEB-2002
                                                                                                                                                                                                                                                                                                                                            01-NOV-2001.
AAS59682;
                                                                                                                                                                                                                                           AASS9682
υ
                                                                                                                                          υ
                             υ
                                                       0000
                                                                                                   υ
                                                                                                                                                                                                                                                    Drosophila melanog
Drosophila melanog
CDNA encoding Dros
D. melanogaster pe
                                                                                                                                                                                                                                                                                                                                                                      Propionibacterium
Pseudomonas syring
Pseudomonas aerugi
                                                                                                                                                                                                                                                                                                                                                                Propionibacterium
                                  November 12, 2003, 21:23:48 ; Search time 242 Seconds (without alignments) 580.045 Million cell updates/sec
                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                      Description
                                                                     atgcagttctctcacgctct......cgctgccggcctcgccagtg
                                                                                                            5105512
    GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                           hits satisfying chosen parameters:
                                                                                                2552756 seqs, 1349719017 residues
                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                          nucleic - nucleic search, using sw model
                                                                                                                                      Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                AASS9682
AASS9566
AAD20424
AASS4321
ABL076S9
ABL076S8
AASS7171
                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                      ü
                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                22222222
                                                         US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                1006
34088
336
1920
2016
4095
1566
                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                               Query
Match
                                                                                                                                                                                                                                                                                                                                                               499.2
449.2
448.1
47.7
47.7
47.3
```

Post-processing:

Database

sed]

08 08

Minimum [Maximum]

Total number of

Searched:

Title: Perfect score:

Run on:

ğ

Sequence:

Scoring table:

```
03-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAD20424;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD20424
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                 Sequences AASS9806-AASS9804 represent DNA molecules encoding associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions cueed by P. acnes. The proteins and their diagnosis of medical conditions cueed by P. acnes. The disorders include SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and osteomytelitis), uveitis and endophthalmitis. P. acnes is also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypeptides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies and therefore treat P. acnes proteins. These antibodies and therefore treat P. acnes indections. The antibodies may also be used as diagnostic agents for determining P. acnes presence encodes the polypeptides shown in AAUGS636-AAUGS64 and AAUG7799-AAUG7800.

Consequence of the sequence data for this parent did not form part of the printed precine in the sequence and part of the printed precine in the sequence data for this patent did not form part of the printed precine in the sequence data for this patent did not form part of the printed precine in the sequence data for this patent did not form part of the printed precine in the sequence data for this patent did not form part of the printed precine in the sequence data for this patent did not form part of the printed precine in the sequence data for this patent did not form part of the printed precine in the sequence and the sequence and the sequence of the printed precine in the sequence of the printed precine in the sequence data for this patent did not form part of the printed precined the printed precined the printed precined the printed precined the printed pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay; cermatological; osteopathic; neuroprotectent; d8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acne vulgaris -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 23; Length 1006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 915 GCAGTTCACTCAATCCCTCGTCGTCTTTGAGACCAGCGTCGCGAG 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Propionibacterium acnes immunogenic protein encoding DNA #61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 GCAGTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bhatia A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     49.2%; Score 25.6; DB 23; Length 70.8%; Pred. No. 26; Astive 0; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1006 BP; 201 A; 352 C; 250 G; 199 T; 4 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Skeiky YAW, Persing DH, Mitcham JL, Wang SS,
L'maisonneuve J, Zhang Y, Jen S, Carter D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                         Claim 1; SEQ ID No 177; 1069pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E
E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAS59566 standard; DNA; 34088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-APR-2000; 2000US-199047P.
02-JUN-2000; 2000US-208841P.
07-JUL-2000; 2000US-216747P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-APR-2001; 2001WO-US12865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 70.8 es 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Propionibacterium acnes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (CORI-) CORIXA CORP.
                WPI; 2001-616774/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200181581-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAS59566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAS59566
ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
```

```
Supplient bacterium acres journel properties. The proteins and their associated DNA sequences are used in the treatment, prevention and diagnosis of medical conditions caused by P. acres. The disorders include (SAPHO syndrome (Synovitis, acne, pustulosis, hypertosis and solders include (SAPHO syndrome (Synovitis, acne, pustulosis, hypertosis also involved in infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne vulgaris. A method for detecting the presence or absence of P. acnes in a patient comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein in the sample. The polypetides may be used as antigens in the production of antibodies specific for P. acnes proteins. These antibodies can be cased to downregulate expression and activity of P. acnes polypeptides and ctivity of P. acnes polypeptides and ctivity of P. acnes presence, for example, by cased to downregulate expression and activity of P. acnes polypeptides and ctivity of P. acnes presence encodes the diagnostic agents for determining P. acnes presence, for example, by company of inked immunosorbent assay (ELISA). This sequence encodes the polypeptides shown in AAMUSSSS-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSSO-AAMUSSO-AAMUSSO-AAMUSSSO-AAMUSSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-AAMUSSO-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conserved Effector Loci; CEL; cytostatic; antibacterial; gene therapy; Exchangeable Effector Loci; EEL; disease resistance; transgenic plant; eukaryotic cell death; cancer; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for treating acne vulgaris -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49.2%; Score 25.6; DB 23; Length 34088; 70.8%; Pred. No. 40; Live 0; Mismatches 14; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29931 GCAGTTCACTCAATCCCTCGTCGATCTCTTTGAGACCAGCGTCGCGAG 29978
                                                                                                                                                                                                                                                                                                                                                               Sequences AAS59506-AAS59804 represent DNA molecules encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 GCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 34088 BP; 6991 A; 11002 C; 9453 G; 6639 T; 3 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pseudomonas syringae pv. syringae (Psy) shcA DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= a
/product= "Psy shcA protein"
                                                                                                                                                                                                                                          Claim 1; SEQ ID No 61; 1069pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD20424 standard; DNA; 336 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-APR-2000; 2000US-194160P.
11-AUG-2000; 2000US-224604P.
17-NOV-2000; 2000US-249548P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-APR-2001; 2001WO-US10698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 70.8
nes 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pseudomonas syringae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200175066-A2
```

```
23-MAR-2000; 2000US-191637P
                                                                                                                                                                                                                                                       Xu HH;
                                                                                                                                                                                                                                                                                                   WPI; 2001-611495/70.
                                                                                                                                                                                                                                                                                                                             P-PSDB; AAU36462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200171042-A2
                                                                                                                                                                                                                           Haselbeck R,
                            26-MAY-2000;
                                                                                                                           16-FEB-2001;
                                                                                                                                                                                                                                                       Yamamoto RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABL07659;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABL07659/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The inversion fractive to an isolated multiple and acts mousefule comprising a nucleotide sequence encoding proteins or polypeptides of Pseudomonas Conserved Effector Loci (CEL) and EEL DNA are useful for imparting disease resistance to a plant, by transforming a plant cell with the nucleic acid and regenerating a transgenic plant from the transformed plant cell, where the transgenic plant expresses a heterologous DNA molecule under conditions effective to impart disease resistance, or by treating a plant with an isolated protein or polypeptide, by applying the protein or polypeptide, under conditions effective to impart of plant cell in an isolated form or by applying a non-pathogenic bacteria which ascretes the protein or polypeptide, under conditions effective to impart disease resistance to the treated plant. CEL and EEL proteins are useful for causing eukaryotic cell death, by introducing a cytotoxic sequence cells of a patient under conditions effective to cause cell death. CEL and EEL proteins are also useful for treating a cancer cells of a patient under conditions effective to cause death of cancer cells of a patient under condition. The method thrust reating the expected DNA delivery system comprising a DNA molecule encoding the cytotoxic Pseudomonas protein, to the patient, where the targetted DNA delivery system delivers the condition and the cytotoxic Pseudomonas protein, conditions effective to sequence the cancer cells and the cytotoxic Pseudomonas protein, conditions effective to sequence the cancer cells and encoding the cytotoxic Pseudomonas protein, conditions effective to sequence the cancer cells and encoding the cytotoxic Pseudomonas protein, conditions effective to the patient, where the targetted DNA delivery system delivers the cancer cells and encoding the cytotoxic Pseudomonas protein, and approxed and an encoding the cytotoxic Pseudomonas protein, and approxed and an encoding the system delivers the present sequence is a DNA and an encoding the cytotoxic pseudomonas protein and appro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                         invention relates to an isolated nucleic acid molecule comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pseudomonas aeruginosa DNA for cellular proliferation protein #452.
                                                                                                                                                                                                                      New nucleic acid molecules encoding proteins or polypeptides of
Pseudomonas Conserved Effector Loci and Exchangeable Effector Loci
genomic sequences, for imparting disease resistance to plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is expressed in the cancer cells. The present sequence is a DN encoding Pseudomonas syringae pv. syringae (Psy) shcA protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154 CTGTTGGCTGGCGCTCTCAACCCCCTTGTGAATGCCGGCCCCGGCATG 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 22; Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 CAGTICICICACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antisense; ds; prokaryotic cellular proliferation gene; antibiotic; antibacterial; drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 336 BP; 73 A; 88 C; 103 G; 72 T; 0 other;
                       (UYNE-) UNIV NEVADA & COMMUNITY COLLEGE SYSTEM.
(UYNE-) UNIV NEBRASKA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48.1%; Score 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.
                                                                                               Charkowski AO;
                                                                                                                                                                                                                                                                                                                     Claim 1; Page 43; 217pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAS54321 standard; DNA; 1920 BP
CORNELL RES FOUND INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 69.4%;
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-MAR-2001; 2001WO-US09180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-MAR-2000; 2000US-191078P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                               Alfano JR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pseudomonas aeruginosa
                                                                                                                                           WPI; 2001-639361/73.
P-PSDB; AAE12589.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200170955-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-SEP-2001.
                                                                                               Collmer A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AASS4321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
AAS54321/c
```

ઠે

```
The invention relates to antisense inhibitors of genes essential to prokaryotic cellular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential conservations their sets of genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella consemble sets descouled are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella consential montantia, Pseudomonas aeruginosa and Enterococcus faccalis. The invention is also useful for the identification of potential new targets for antibiotic development. The antisense nucleic acids can also be used to obtain antibodies capable of binding to the expressed proteins. The proteins can be used to screen compounds in rational drug discovery control of the proteins can be used to screen compounds in rational drug discovery control of production callular proliferation in a wide variety of organisms. The protein callular proliferation protein. Note: The sequence data for this patent did not form part conficuration in the printing specification, but was obtained in electronic conficuration in electronic directly from wito at the printing and the properties of the printing and the properties of the printing and the properties of the printing and the printing and the properties of the printing and th
                                                                                                                                                                                                                                                                                                                                                                                      Carr GJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster expressed polynucleotide SEQ ID NO 17459.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila, developmental biology, cell signalling, insecticide, pharmaceutical, gene, ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 507 CAGCTCGCTGACCTCCTTCGCCTCGTCGCACCCGGCGACGTCAGCG 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 CAGITCICICACGCTCICATCGCTCTCGTCGCTGCCGGCCTCGCCAGIG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48.1%; Score 25; DB 23; Length 1920;
                                                                                                                                                                                                                                                                                                                                                                                      Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New polynucleotides for the identification and development antibiotics, comprise sequences of antisense nucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1920 BP; 362 A; 622 C; 625 G; 311 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                 Wall D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 45;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 27; Seg ID No 7958; 511pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                format directly from WIPO at
ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                 Zyskind JW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABL07659 standard; cDNA; 2016 BP
23-OCT-2000; 2000US-242578P.
27-NOV-2000; 2000US-253625P.
22-DEC-2000; 2000US-257931P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69.48;
                                                                                                                                                          2001US-269308P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                 Ohlsen KL,
                                                                                                                                                                                                                                                                        (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 69.4
les 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster.
```

1.8

ö

Gaps

; 0

```
The invention relates to sixty six novel isolated Drosophila melanogaster G-protein coupled receptors (GPCR). The GPCR proteins and nucleic acids are useful in the treatment and diagnosis of GPCR-related conditions. The GPCR proteins and nucleic acids are also useful for identifying modulators of GPCR proteins for use as insecticides. The nucleic acid can also be used to detect mutations in GPCR genes and gene expression products such as mRNA. AAS57072-AAS57203 represent D melanogaster G-coupled protein receptor genomic and coding sequences of
                                                                                                                                                                     The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                              The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila, G-protein coupled receptor, GCPR, insecticide, diagnostic, mutation detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sixty six Drosophila Melanogaster G-protein coupled receptors (GP
useful in the treatment and diagnosis of GPCR-related conditions
for identifying GPCR modulators for use as insecticides -
                                                                                                                                                                                                                                                                               Query Match 47.7%; Score 24.8; DB 23; Length 4095; Best Local Similarity 72.7%; Pred. No. 57; Matches 32; Conservative 0; Mismatches 12; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA encoding Drosophila G-protein coupled receptor, GCPR #50.
 Claim 1; SEQ ID NO 17456; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                 2427 ccrcacerrecardecerresteardaerrecredecarre 2470
                                                                                                                                                                                                                                                                                                                                                    25
                                                                                                                                                                                                                                            Sequence 4095 BP; 1151 A; 937 C; 945 G; 1062 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                    9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1566 BP; 291 A; 490 C; 437 G; 348 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 4; Page 229-230; 392pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS57171 standard; cDNA; 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-2000; 2000US-191638P.
18-JUL-2000; 2000US-0618893.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAR-2001; 2001WO-US09341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-616405/71.
                                                                                                                                                          (ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; AAU38972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PEKE ) PE CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200170980-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cravchik A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAS57171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS57171/c
                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
 ò
                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                        capable of detecting 1000 or more genes from brosophila. The invention is useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL/6176-ABL/30511), expressed DNA sequences (ABL/6175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                     New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                           The invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster expressed polynucleotide SEQ ID NO 17456.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 23; Length 2016;
                                                                                                                                                                                                                          Claim 1; SEQ ID NO 17459; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               590 CCCTCACGTTCTCCATGCCCTCGTCGATGACTTCCTCGGCATTG 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2016 BP; 469 A; 511 C; 547 G; 489 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 24.8; DB:
Pred. No. 52;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EW;
                                                                   Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Myera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABL07658 standard; cDNA; 4095 BP
                                                                   PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 72.7
Matches 32, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pharmaceutical; gene; ss.
                                                                   Ľ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                   (ABB57737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Adams M,
                                                                   Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-656860/75.
                                                                                                    2001-656860/75
                                (PEKE ) PE CORP NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (PEKE ) PE CORP NY
                                                                                                                      P-PSDB; ABB63556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; ABB63555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-SEP-2001
                                                                   Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABL07658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
23-MAR-2000; 2000US-191638P.
18-JUL-2000; 2000US-0618893.
                                                                                                                                                                                                                                                                                                                                                                                                                                  33; Conservative
                                       Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mutation detection; ds
                                                                                                                                                                     Venter JC, Adams M,
                                                                                                                                                                                        WPI; 2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                        (ABB57737-ABB72072)
                                                                                                                                                (PEKE ) PE CORP NY
                                                         WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200170980-A2
                                                                                                                                                                                                                                 interactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-JAN-2002
                                                                              27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAS57170;
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
AAS57170/
Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention describes novel polypeptides (P1) from Drosophila melanogaster having the biological activity of a peptide receptor. Molecules of the invention are used to find new plant protection compounds or insecticides, or to find genes encoding a polypeptide involved in the structure of functionally similar receptors in insects This sequence encodes a Drosophila melanogaster (fruitfly) peptide receptor described in the method of the invention.
                                                                                                                                                                                                                                                                                                                                                                                      New polypeptides from Drosophila melanogaster have biological activity of peptide receptor, useful to find new compounds for plant protection and insecticides
                                                                                                                                                                                                Insect; fruitfly; peptide receptor; plant protection; insecticide; ss.
                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster genomic polynucleotide SEQ ID NO 20470.
        Length 1566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 22; Length 1566;
                                                         9.00
                                               49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    646 GCACAGCGGTCACGACCTCCTCGCTCTCGCTGGAGTCCTCCACA
                            Indelg
                                              3 GCAGTICTCTCACGCTCTCATCGCTCTCGCTGCCGGCCTCGCCA
                                                                                                                                                                            D. melanogaster peptide receptor encoding cDNA SEQ ID 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 GCAGTICTCTCACGCTCTCATCGCTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1566 BP; 291 A; 490 C; 437 G; 348 T; 0 other;
                           14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
        DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 24.6; DB; Pred. No. 59; 0; Mismatches
                           0; Mismatches
                  59;
        Score 24.6;
Pred. No. 59
                                                                                                                                                                                                                                                                                                                                       Schulte T;
                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 6; Page 107-110; 128pp; German
                                                                                                                   ВР
                                                                                                                  AAH49426 standard; cDNA; 1566
      47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    999/c
ABL22999 standard; DNA; 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47.3%;
                                                                                                                                                                                                                                                                             18-MAR-2000; 2000DE-1013618.
                                                                                                                                                                                                                                                                                                 18-MAR-2000; 2000DE-1013618
                                                                                                                                                                                                                                                                                                                                       Antonicek H, Friedrich G,
                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 70.2
Matches 33; Conservative
                           33; Conservative
                                                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                          2001-571695/65.
                Best Local Similarity
Matches 33; Conserv
                                                                                                                                                                                                                                                                                                                   (FARB ) BAYER AG
                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAB86973
                                                                                                                                                                                                                                      DE10013618-A1
                                                                                                                                                                                                                                                          20-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-2002
                                                                                                                                                        11-DEC-2001
                                                                                                                                     AAH49426;
         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABL22999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABL22999/c
ID ABL2:
XX
AC ABL2:
XX
DT 26-M
XX
DE Dros
                                                                                                                           ò
                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
```

```
The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention is useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila, G-protein coupled receptor, GCPR, insecticide, diagnostic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
Drosophila, developmental biology, cell signalling, insecticide, pharmaceutical, gene, ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              646 GCACAGCGGTCACGACCTCCTCCTCCTCGAGTCCTCCACA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding Drosophila G-protein coupled receptor, GCPR #50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; SEQ ID NO 20470; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 GCAGTICICICACGCICICATCGCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1566 BP; 291 A; 490 C; 437 G; 348 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 24.6;
Pred. No. 59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Myers EW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AASS7170 standard; DNA; 3772
                                                                                                                                                                                                                                                                                                             23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                              23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-MAR-2001; 2001WO-US09341.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
```

and

```
Berka RM,
                                                                                                                                                                                                                                                              AAF12291;
                                                                                                                          Query Match
Best Local
                                                                                                                                              Matches
                                                                                                                                                                                                                                 AAF12291
 8x8888888x8
                                                                                                                                                                                       g
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention is
                                                                                                                                          The invention relates to sixty six novel isolated Drosophila melanogaster G-protein coupled receptors (GPCR). The GPCR proteins and nucleic acids are useful in the treatment and diagnosis of GPCR-related conditions. The GPCR proteins and nucleic acids are also useful for identifying modulators of GPCR proteins for use as insecticides. The nucleic acid can also be used to detect mutations in GPCR genes and gene expression products such as mRNA, A855702-A8557203 represent D. melanogaster G-coupled protein receptor genomic and coding sequences of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                             Gaps
                                                                                Sixty six Drosophila Melanogaster G-protein coupled receptors (GP useful in the treatment and diagnosis of GPCR-related conditions for identifying GPCR modulators for use as insecticides -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster genomic polynucleotide SEQ ID NO 20467.
                                                                                                                                                                                                                                                                       DB 22; Length 3772;
                                                                                                                                                                                                                                                                                                                                   1701 deacadedreacerecrecrecrecreseres 1655
                                                                                                                                                                                                                                                                                                                  49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 20467; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                3 GCAGTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                   Sequence 3772 BP; 933 A; 943 C; 931 G; 965 T; 0 other;
                                                                                                                                                                                                                                                                                           14;
                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                       Score 24.6; I
Pred. No. 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Myers EW;
                                                                                                                         Claim 4; Page 228-229; 392pp; English
                                                                                                                                                                                                                                                                                                                                                                                        <u>B</u>P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PWD,
                                                                                                                                                                                                                                                                       47.38;
                                                                                                                                                                                                                                                                                                                                                                                       ABL22998 standard; DNA; 3772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                             33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pharmaceutical; gene; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster.
                                                 2001-616405/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-656860/75.
         ž
                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (PEKE ) PE CORP NY
                                                            P-PSDB; AAU38972
         CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200171042-A2.
                                                                                                                                                                                                                                 the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         interactions -
                             Cravchik A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-SEP-2001
         (PEKE ) PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Venter JC,
                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                            ABL22998;
                                                                                                                                                                                                                                                                                                                                                                            ABL22998/c
                                                                                                                                                                                                                                                                                   Best Loc
Matches
ઠે
                                                                                                                                                                                                                                                                                                                                   g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention describes a method for monitoring differential expression of genes in a first filamentous fungal (FF) cell relative to cappression of the same genes in one or more second filamentous fungal cells. The method uses fluorescence-labeled nucleic acids isolated from the FF cells and a substrate of expressed sequence tags (EST). The ESTs are used in the methods for monitoring differential expression of genes in a first filamentous fungal (FF) cell relative to expression of the same genes in one or more second filamentous fungal cells. Monitoring the global expression of genes from FF cells allows the production the global expression of unknown open reading frames can be identified and gene copy number variation and stability can be monitored. The expression of genes can be used to study how FF cells
                                                                                                                                                                                                      The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        uses fluorescence-labeled nucleic acids isolated from the cells and a substrate of expressed sequence tags -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Multiple gene expression; filamentous fungal cell; EST; expressed sequence tag; Fusarium venenatum; Aspergillus niger; Aspergillus oryzae; Trichoderma reesei; identification; recombination; culture condition; environmental stress; spore morphogenesis; metabolic pathway engineering; catabolic pathway engineering; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
useful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA (ABB57737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Olsen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                             DB 23; Length 3772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1701 GCACAGCGGTCACGACCTCCTCGCTCGCTGGAGTCCTCCACA 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Clausen IG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 GCAGTICTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                        Sequence 3772 BP; 933 A; 943 C; 931 G; 965 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kauppinen S,
                                                                                                                                                                                                                                                                  at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                      Score 24.6; DB Pred. No. 66; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aspergillus oryzae EST SEQ ID NO:4814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 88; Page 2035; 3161pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (NOVO ) NOVO NORDISK BIOTECH INC (NOVO ) NOVO NORDISK AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shuster JR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                                                                                                                                                                                                      ch 47.3%;
1 Similarity 70.2%;
33; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF12291 standard; cDNA; 695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22-MAR-2000; 2000WO-US07781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0273623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-594572/56.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rey MW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Aspergillus oryzae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200056762-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-SEP-2000
```

```
ö
adapt to changes in culture conditions, environmental stress, spore morphogenesis, recombination, metabolic or catabolic pathway engineering. Using ESTs provides several advantages over genomic or random cDNA clones including elimination of redundancy as one spot on a array equals one gene or open reading frame, and organisation of the microarrays based on function of the gene products to facilitate analysis of the results. AAF01748 to AAF11247 represents ESTs from figer; AAF11248 to AAF11853 represents ESTs from Aspergillus niger; AAF1184878 represents ESTs from Aspergillus oryzae; and AAF14979 to AAF118478 represents ESTs from Aspergillus oryzae; all specifically claimed in the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymersae chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantiteting a polypeptide in issue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful for treating disorders involving described to the sexpression or biological activity.
                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human, chromosome mapping; gene mapping; gene therapy, forensic, food supplement; medical imaging; diagnostic; genetic disorder;
                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                                                                                                                                                                                          DB 21; Length 695;
                                                                                                                                                                                                                                                                                      Query Match . 46.9%; Score 24.4; DB 21; Length Best Local Similarity 73.8%; Pred. No. 63; Matches 31; Conservative 0; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                              47
                                                                                                                                                                                                                                                  Sequence 695 BP; 144 A; 199 C; 174 G; 174 T; 4 other;
                                                                                                                                                                                                                                                                                                                                                                      GTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA encoding novel human diagnostic protein #8810.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID No 8810; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAS73006 standard; cDNA; 5484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tang YT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; ABG08819.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS73006;
                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAS73006/
        820000000000000
                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                               8
```

```
..
The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other trains to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention.

Note: The sequence data for this patent appear in the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                   Human, immune; haematopoietic; immune/haematopoietic antigen; cancer; cytostatic; gene therapy; vaccine; metastasis; ds.
                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                         Human immune/haematopoietic antigen genomic sequence SEQ ID NO:25674.
                                                                                                                                                                                                .
0
                                                                                                                                                                   DB 23; Length 5484;
                                                                                                                                         Seguence 5484 BP; 1153 A; 1384 C; 1583 G; 1364 T; 0 other;
                                                                                                                                                                   Score 24.4; DB 23; Length
Pred. No. 80;
0; Mismatches 11; Indels
                                                                                                                                                                                                                                        4438 TTTGCTGCCTCTCGTCGCTCTCGTCGCCGTCGCC 4397
                                                                                                                                                                                                                        7 TICICICACGCICICATCGCICGTCGCCGCCTCGCC 48
                                                                                                             at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                       AAK70862 standard; DNA; 25913
                                                                                                                                                                     46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-JUN-2000; 2000US-0215135.
07-JUL-2000; 2000US-0216647.
07-JUL-2000; 2000US-0216880.
11-JUL-2000; 2000US-0217487.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-WAR-2000; 2000US-0186350.
16-WAR-2000; 2000US-0189874.
17-WAR-2000; 2000US-0190076.
18-APR-2000; 2000US-0198123.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-MAY-2000; 2000US-0205515.
07-JUN-2000; 2000US-0209467.
28-JUN-2000; 2000US-0214886.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-FEB-2000; 2000US-0180628.
24-FEB-2000; 2000US-0184664.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0220964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-JAN-2001; 2001WO-US01354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0217496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0218290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0224518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0224519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0225213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0225268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-0225270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0225447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0225214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0225757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-0226279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0225267
                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                31; Conservative
                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200157182-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-JUL-2000;
14-JUL-2000;
26-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-AUG-2000;
14-AUG-2000;
18-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                              06-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-AUG-2001
                                                                                                                                                                                                                                                                                                                                                   AAK70862;
                                                                                                                                                                                                                                                                                                          AAK70862
  ઠ
                                                                                                                                                                                                                                                    g
```

```
2000US-0231968.
2000US-0232397.
2000US-0232398.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-0236367.
2000US-0236368.
2000US-0236369.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0239937.
2000US-0240960.
2000US-0241221.
                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0231413.
2000US-0231414.
2000US-0232080.
2000US-0232081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0233064.
2000US-0233065.
2000US-0234223.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0241785.
2000US-0241786.
                                                                                                                                                                                                                                                                                                                                                                 2000US-0231242.
2000US-0231243.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0234997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-0235484
2000US-0235834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-0236370
2000US-0236802
                                                                                                                2000US-0228924
2000US-0229287
                                                                                                                                                                    2000US-0229343
2000US-0229344
                                                                                                                                                                                                                              2000US-0229345
                                                                                                                                                                                                                                                     2000US-0229509
                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-0231244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0232399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              000US-0232400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-0237038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0237039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0237040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0239935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-0241787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0241809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-0241826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-0244617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0246474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-0246475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0246476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0246477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0246523
                                                                                                                                                                                                                                                                                  2000US-0229513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0234274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-0237037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0246524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0246613
22 - AUG - 2000; 22 - AUG - 2000; 23 - AUG - 2000; 24 - AUG - 2000; 25 - AUG - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 - 2000; 26 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-SEP-2000;
27-SEP-2000;
27-SEP-2000;
29-SEP-2000;
29-SEP-2000;
29-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29.5EP-2000
02-077-2000
02-077-2000
02-077-2000
02-077-2000
13-077-2000
13-077-2000
13-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077-2000
20-077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-SEP-2000;
14-SEP-2000;
14-SEP-2000;
14-SEP-2000;
14-SEP-2000;
21-SEP-2000;
21-SEP-2000;
25-SEP-2000;
25-SEP-2000;
25-SEP-2000;
25-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-NOV-2000;
08-NOV-2000;
08-NOV-2000;
```

17-NOV-2000; 2000US-0249210. 17-NOV-2000; 2000US-0249211. 17-NOV-2000; 2000US-0249211. 17-NOV-2000; 2000US-0249213. 17-NOV-2000; 2000US-0249214. 17-NOV-2000; 2000US-0249216. 17-NOV-2000; 2000US-0249216. 17-NOV-2000; 2000US-0249218. 17-NOV-2000; 2000US-0249218. 17-NOV-2000; 2000US-024924. 17-NOV-2000; 2000US-024924. 17-NOV-2000; 2000US-024926. 17-NOV-2000; 2000US-024926. 17-NOV-2000; 2000US-024229; 17-NOV-2000; 2000US-0249300. 01-DEC-2000; 2000US-0251050. 05-DEC-2000; 2000US-025198. 05-DEC-2000; 2000US-025188. 06-DEC-2000; 2000US-0251886. 08-DEC-2000; 2000US-0251866. 08-DEC-2000; 2000US-0251866. 08-DEC-2000; 2000US-0251869. 08-DEC-2000; 2000US-0251869. 08-DEC-2000; 2000US-0251869.

Ruben SM Rosen CA, Barash SC,

(HUMA-) HUMAN GENOME SCI INC

WPI; 2001-483426/52.

Nucleic acids encoding human immune/hematopoietic antigen polypeptides, useful for preventing, diagnosing and/or treating cancers and metastasis -

Disclosure; SEQ ID NO 25674; 3071pp + Sequence Listing; English.

AAX54951 to AAX64702 encode the human immune/haematopoietic antigen (I)

amino acid sequences given in AAM82170 to AAM91921. (I) have cytostatic
activity, and can be used in gene therapy and vaccine production. (I)
proteins and polynucleotides may be used in the prevention, diagnosis and
treatment of diseases associated with inappropriate (I) expression. For
example, they may be used to treat disorders associated with decreased
expression by rectifying mutations or deletions in a patient's genome
that affect the activity of (I) by expressing inactive proteins or to
supplement the patients own production of (I). Additionally, (I)
consultational activity of (I) by expressing inactive proteins or to
cypy and the patients own production of (I). Additionally, (I)
confortational activity of the nucleic acids into a host cell and culturing the cell to express the
cypy and treat immune/haematopoietic-related diseases, especially
cancers and cancer metastases of haematopoietic antigen genomic
conforts and cancer metastases of haematopoietic antigen genomic
sequences from the present invention. AAX54942 to AAX64950 and AAM82169
cypy represent invention. AAX54942 to AAX64950 and AAM82169

Sequence 25913 BP; 5398 A; 6705 C; 7089 G; 6721 T; 0 other;

Gaps Query Match

46.9%; Score 24.4; DB 22; Length 25913;
Best Local Similarity 68.0%; Pred. No. 96;
Matches 34; Conservative 0; Mismatches 16; Indels 0;

ö

ò g σ

```
The invention relates to detecting (MI) granulocyte (GC) activation (GCA), by detecting the level of expression of gene(s) (Gs) identified by DNA detecting the level of expression of Ges identified by CDNA chip analysis as given in the specification, and comparing the expression level in an unactivated of the expression level in an unactivated CGC, where differential expression of Gs is indicative of GCA. Also included are modulating (M2) GA by contacting GC with an agent that alters the expression of at least one gene in Gs; (2) screening (M3) cronic) in a tissue, an allergic response in a subject, exposure of a subject to a pathogen or sterile inflammatcry disease using the chornic) in a tissue, an allergic response in a subject, exposure of a subject to a pathogen or sterile inflammatcry disease, by detecting the chornic) in a tissue, an allergic response in a subject to a pathogen or sterile inflammatcry disease, by detecting the level of expression in a sample of the tissue of gene(s) from Gs, where CC level of expression in a sample of the tissue of inflammation, an allergic response in a subject, exposure of a subject to a pathogen or sterile inflammatory desease, by contacting a tissue having inflammation with an agent that modulates the expression of gene(s) from Gs in the tissue. M1 is useful for detecting an inflammation (especially chronic) or in a tissue, an allergic computating GA; M3 is useful for screening an agent capable of modulating GA; M3 is useful for screening an agent capable of modulating GA; M3 is useful for screening an agent capable of computating GA; M3 is useful for screening an agent capable of computating GA; M3 is useful for screening an agent capable of modulating GA; M3 is useful for screening an agent capable of modulating GA; M3 is useful for screening an agent capable of modulating GA; M3 is useful for detecting an inflammation (especially chronic) in a tissue, an allergic response in a subject, exposure of a subject to a pathogen or sterile inflammatory bowel disease; also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        granulocyte activation by detecting differential expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of genes associated with granulocyte activation, which serves as diagnostic markers that is useful for monitoring disease states and
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; 88; granulocytic cell; DNA chip; bacterial infection, viral infection; parasitic infection; protozoal infection; fungal infection; sterile inflammatory disease; psoriasis; rheumatoid arthritis; alomerulonephritis; asthma; thrombosis; cardiac reperfusion injury; renal reperfusion injury; ARDS; andlt respiratory distress syndrome; inflammatory bowel disease; crohn's disease; ulcerative colitis; periodontal disease; granulocyte activation; chronic inflammation; allergy.
                                                                                                                                                                                                                                                                                                                                                       Human cDNA differentially expressed in granulocytic cells #135.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vockley J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yamaga S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID No 135; 114pp; English.
                                                     ABK83564 standard; cDNA; 198161 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Beazer-Barclay Y, Weissman SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-OCT-2001; 2001WO-US30821.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-OCT-2000; 2000US-237189P
                                                                                                                                                                                                                                                      14-AUG-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GENE-) GENE LOGIC INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-435328/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200228999-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              drug toxicity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Detecting
                                                                                                                                                      ABK83564;
ABK83564/c
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Auxins are plant hormones that influence plant behaviour and development e.g. vascular tissue differentiation, apical development, tropic responses and organ (e.g. flower, leaf) development. The present invention relates to corn auxin transport protein coding sequences and proteins. The present sequence is one such coding sequence. This sequence may be used to modulate root development, e.g. to produce a more robust root system, alter root angle or redirect root growth. Also, the present sequence may be useful for gene mapping (e.g. for plant breeding) and to identify loss of function mutants. The protein encoded by the present sequence may be useful for raising specific antibodies, for the detection of auxin transport proteins and to design and/or identify specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibitors of auxin transport proteins, potentially useful as herbicides.
                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                            sequence represents a gene differentially expressed in granulocytes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at the wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25296 recadificetreacaretreacarieretrecerreceaaagerecagi 25247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New nucleic acid sequences encoding new auxin transport proteins, useful for modulating root growth of plants and to screen for
                                                                                                                                                                                                                                                                                                       Score 24.4; DB 24; Length 198161;
Pred. No. 1.2e+02;
0; Mismatches 16; Indels 0; C
                                                                                                                                                                                                                                          Sequence 198161 BP; 61561 A; 45946 C; 41360 G; 49294 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rice auxin transport protein clone rslln.pk003.n3 DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     root development; gene mapping; plant breeding; herbicide; ss.
useful for treating one of the above conditions. The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / Match 46.2%; Score 24; DB 21; Length 2162; Local Similarity 68.8%; Pred. No. 97; Onservative 0; Mismatches 15; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2162 BP; 428 A; 694 C; 636 G; 404 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cahoon RE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Е І.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 2; Pages 65-66; 94pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (DUPO ) DU PONT DE NEMOURS & CO (PION-) PIONEER HI-BRED INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA94724 standard; DNA; 2162 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Orozco EM, Weng Z, Bruce WB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Auxin transport protein, rice,
                                                                                                                                                                                                                                                                                                           46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-MAY-2000; 2000WO-US12061.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0133040.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 68.0
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-687647/67.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; AAB26937.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200068389-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oryza sativa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      herbicides -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-NOV-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAA94724;
                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 16
AAA94724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
8888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SXCCCCCCCX SX T T T T X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B X X B 
                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
```

(first entry)

```
Corynebacterium glutamicum HA protein nucleotide sequence SEO 1D NO:325
                                                                                             Corynebacterium glutamicum; homeostasis; adaptation; HA protein; fine chemical production; organic acid; proteinogenic amino acid; nonproteinogenic amino acid; purine base; pyrimidine base; nucleoside; nucleotide; lipid; sarurated fatty acid; unsaturated fatty acid; carbohydrate; aromatic compound; vitamin; cofactor; polyketide; enzyme; diagnosis; Corynebacterium diphtheriae; genetic engineering; brevibacterium; environmental condition; ds.
AAF71300 standard; DNA; 732 BP.
                                               30-APR-2001
                       AAF71300;
The present invention provides a number of nucleotide and protein are dequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analyzing the expression profile or expression pattern of a gene derived from Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium. Coryneform bacteria are useful for producing mainto acids, nucleic acids, vitamins, saccharides and organic acids, particularly L-lysine. The present sequence is a nucleic acid described in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel polynucleotides derived from Coryneform bacteria, for identifying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                 5, Hayashi M, Ochiai K, Yokoi H;
Ozaki A;
                                                                                                                                                                                                 amino acid synthesis; vitamin; saccharide;
          DB 22; Length 609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 8; SEQ ID NO: 3337; 246pp + Sequence Listing; English.
                                                                                                                                                                          glutamicum coding sequence fragment SEQ ID NO: 3337.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 609 BP; 142 A; 195 C; 146 G; 126 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 23.8;
Pred. No. 97
                                                                                                                                                                                                                                                                                                                                                                                                                   Ando S,
                                                                                                                                                                                                                                                                                                                                                                                                                               Ikeda M,
                                                                                                BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.8%;
                                                                                                                                                                                                                                                                                                                                      16-DEC-1999; 99JP-0377484.
07-APR-2000; 2000JP-0159162.
03-AUG-2000; 2000JP-0280988.
                                                                                                                                                                                                                                                                                                                                                                                        (KYOW ) KYOWA HAKKO KOGYO KK
                                                                                               AAH68302 standard; DNA; 609
                                                                                                                                                                                                                                                                                                                18-DEC-2000; 2000EP-0127688.
                                                                                                                                                                                                               organic acid synthesis; ds.
                                                                                                                                                                                                                                        Corynebacterium glutamicum.
                                                                                                                                                                                                                                                                                                                                                                                                                 Nakagawa S, Mizoguchi H,
Tateishi N, Senoh A, Ike
                                                                                                                                                 26-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   European Patent Office
                                                                                                                                                                                                  Coryneform bacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-376931/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; AAG93083
                                                                                                                                                                                                                                                                EP1108790-A2
                                                                                                                                                                                                                                                                                         20-JUN-2001.
                                                                                                                         AAH68302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                         å
           ઠે
```

```
AAF71138 to AAF71357 encode the Corynebacterium glutamicum homeostasis and adaptation (HA) proteins given in AAB7923 to AAB79242. The C. glutamicum HA genes (I) can be used in vectors for expression in host cells and production of fine chemicals, such as, an organic acid, proteinogenic or nonproteinogenic amino acid (preferred), purine or proteinogenic or nonproteinogenic amino acid (preferred), purine or proteinogenic or nonproteinogenic amino acid (preferred) purine or fatty acid, diol, carbohydrate, aromatic compound, vitamin, cofactor, polyketide or enzyme. The amino acids produced can be lysine, glutamine, glutamate, alanine, aspartate, glycine, serine, threonine, methionine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated Corynebacterium glutamicum nucleic acid for production or modulation of production of fine chemicals such as amino acids, nucleosides, nucleotides, lipids, fatty acids, carbohydrates, vitamins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zelder O, Haberhauer G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 3; Page 568-569; 712pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pompejus M, Kroeger B, Schroeder H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99DE-1032933.
99DE-1032935.
99DE-1032973.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99DE-1033002.
99DE-1033003.
99DE-1033005.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99DE-1041378
99DE-1041379
                                                                                                                                                                                                                                                                                                                                                                                                                                99DE-1032920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99DE-1032928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99DE-1041390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99DE-1042088
                                                                                                                                                          23-JUN-2000; 2000WO-IB00911
                                                                                                                                                                                                                                                                                               99DE-1032126
Corynebacterium glutamicum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-061974/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BADI ) BASF AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAB79185
                                               40200100842-A2
                                                                                                                                                                                                                                                                                                                                                                        09-JUL-1999;
09-JUL-1999;
14-JUL-1999;
14-JUL-1999;
14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-SEP-1999;
                                                                                                                                                                                                                                                                                                                     09-JUL-1999;
                                                                                                        04-JAN-2001
                                                                                                                                                                                                                                         08-JUL-1999
09-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-JUL-1999
14-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  enzymes
```

.. 0

Gaps

; 0

0; Mismatches 17; Indels

34; Conservative

Matches

ò ద

RESULT 18 AAF71300

2 TGCAGTTCTCTCACGCTCTCATCGCTCGCTGCCGGCCTCGCCAGTG 52

```
ö
                            can
cysteine, valine, leucine, isoleucine, arginine, proline, histidine, tyrosine, phenylalanine, or tryptophan. The fine chemical production can be modulated. The presence of (I) or HA proteins encoded by then are used for diagnosing the presence or activity of Corynebacterium diphtheriae. (I) can be used to map the C. glutamicum genome or used as markers for genetically engineered Corynebacterium or used as markers for genetically engineered Corynebacterium or homeostasis in C. glutamicum or help the microorganism to adapt to different environmental conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention provides two major E. maxima gametocyte antigens having molecular weights of 56 and 82 kDa and encoding polynucleotides. The gametocyte antigens can be produced by standard recombinant methodology. The encoding polynucleotides are useful for preparing a vaccine against Eimera tenella, E. acervulina, E. necatrix, E. praecox, E. maxima, E. mitis or E. brunetti infection. The present sequence represents a E. maxima 230 kDa gametocyte antigen cDNA clone.
                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New nucleic acid comprising a sequence encoding a 56 kDa or 82 kDa
polypeptide from gametocytes of Eimera maxima, useful for preparing
vaccine against Eimera infection
                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                      2 TGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                   DB 22; Length 732;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gametocyte; antigen; 56 kDa; 82 kDa; antiparasitic; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 7077 BP; 1814 A; 1987 C; 2163 G; 1113 T; 0 other;
                                                                                                                                                                                                               45.8%; Score 23.8; DB 22; Length 66.7%; Pred. No. 1e+02; Ative 0; Mismatches 17; Indels
                                                                                                                                                                               Sequence 732 BP; 183 A; 220 C; 166 G; 163 T; 0 other;

 E. maxima 230 kDa gametocyte antigen cDNA.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure, Fig 12; 112pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                   ABZ59094 standard; cDNA; 7077 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wallach M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-JUL-2002; 2002WO-US21233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-JUL-2001; 2001US-303699P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-APR-2003 (first entry)
                                                                                                                                                                                                                                  Best Local Similarity 66.7
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Belli SI, Smith NC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2003-221605/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BELL/) BELLI S I.
(SMIT/) SMITH N C.
(WALL/) WALLACH M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 230 kDa; gene; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO2003004683-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eimeria maxima.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABZ59094;
                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                   AB259094/
   825666666666888
                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                          g
```

```
The present invention describes a nucleic acid (1) comprising a sequence encoding a 250 kba polypeptide from Sporozoites/Merozoites of sequence encoding a 250 kba polypeptide from Sporozoites/Merozoites of Sequence comprising the nucleic acid; (2) a host cell comprising the nucleic acid; (2) a host cell comprising the nucleic acid; (3) a present comprising the nucleic acid; (4) a transformed collocopy (6) a recombinant polypeptide; (4) a transformed collocopy (6) a recombinant polypeptide; (7) a vaccine against collocopy (6) a recombinant polypeptide; (7) a vaccine against collocopy (8) a microorganism expressing an immunologically cross-reactive antigen; (8) immunising a subject against infection by Elmeria, or a microorganism expressing an immunologically cross-reactive conservation upon a newborn subject of an avian species antigen; (9) conferring upon a newborn subject of an avian species of maternal immunity against infection by Elmeria; (10) a fertilised egg cfrom an avian species having an air sac, where the air sac is incoulated with the vaccine; and (11) reducing the output of Eimeria oocytes in faces from a newborn subject of an avian species (1) has antiparasitic collisions and each ne used in a vaccine and in gene therapy. The nucleic collisions acid is useful for preparing a vaccine against E. tenella, E. gracerox, E. maxima, E. mitts or E. brunetti infection.

The present sequence represents a 250 kba antigen protein homologous DNA xx
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New nucleic acid comprising a sequence encoding a 250 kDa polypeptide from sporozoites/merozoites of Elmeria maxima, useful for preparing a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                               Eimeria maxima 250 kDa protein homologous DNA sequence SEQ ID NO:4.
                                                                                                                                                                                                                                                                                     Eimeria maxima; 250 kDa antigen; sporozoite; merozoite; infection; vaccine; antiparasitic; gene therapy; immunodominant; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 23.8; DB 25; Length 7077;
Pred. No. 1.3e+02;
0; Mismatches 12; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 7077 BP; 1814 A; 1985 C; 2165 G; 1113 T; 0 other;
2781 TTCTTCTGCGCACTCATCAATGTCTTGGCAGCCTGCCTCGCCA 2739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2781 TICTTCTGCGCACTCATCAATGTCTTGGCAGCCTGCCTCGCCA 2739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 TTCTCTCACGCTCTCATCGCTCTCGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wallach M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vaccine against Eimeria infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 15; Fig 7A; 198pp; English.
                                                                                                                            В.
                                                                                                                        ABZ22977 standard; DNA; 7077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 72.1%;
Matches 31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-JUL-2001; 2001US-303670P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-JUL-2002; 2002WO-US21237
                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Smith NC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2003-201556/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (WITC/) WITCOMBE D. (SMIT/) SMITH N C. (WALL/) WALLACH M.
                                                                                                                                                                                                                                                                                                                                                                                                           WO2003004684-A2
                                                                                                                                                                                                                                                                                                                                                Eimeria maxima
                                                                                                                                                                                                        10-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Witcombe D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-JAN-2003.
                                                                                                                                                                                                                                                                                                                                                                     Synthetic.
                                                                                                                                                                ABZ22977;
                                                                                  RESULT 20
                                                                                                       AB222977
                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

ခဲ

ö

Gaps

.; 0

45.8%; Score 23.8; DB 25; Length 7077; 72.1%; Pred. No. 1.3e+02; Live 0; Mismatches 12; Indels 0;

Query Match Best Local Similarity 72.1% Matches 31, Conservative

```
The present invention describes a nucleic acid (I) comprising a sequence encoding a 250 kDa polypeptide from Sporozoites/Merozoites of Eimeria maxima or its homologue or complement. Also described: (I) a vector comprising the nucleic acid; (2) a host cell comprising the nucleic acid; (2) a host cell comprising the nucleic acid; (3) producing a recombinant 250 kDa polypeptide; (6) a recombinant 201ypeptide; (7) a vaccine against E. tenella, E. acervulina, E. necatrix, E. praecox, E. maxima, E. mitis or E. brunetti or a microorganism expressing an immunologically cross-reactive antigen; (9) immunising a subject against infection by Eimeria, or a microorganism expressing an immunologically cross-reactive antigen; (9) conferring upon a newborn subject of an avian species maternal immunity against infection by Eimeria; (10) a fertilised egg from an avian species having an air sac, where the air sac is incoulated with the vaccine; and (11) reducing the output of Eimeria ocytes in activity and can be used in avaccine and in gene therapy. The nucleic activity and can be used in a vaccine and in gene therapy. The nucleic cativity and can be used in a vaccine against E. tenella, E. acervulina, E. necatrix, E. preparing a vaccine against E. tenella, E. acervulina, E. ecatrix, E. preparing a vaccine against E. tenella, E. acervulina, The present sequence encodes a 250 kDa antigen protein, which is used in an example from the present invention.
                                                                                                                                                                                                                                                                                                                                                 / restial
/partial
/product= "250 kDa antigen protein"
/note= "the coding sequence is given as shown in the
figure and any X's in the protein sequence are encoded
by stop codons, no start or stop codons given"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New nucleic acid comprising a sequence encoding a 250 kDa polypeptide from sporozoites/merczoites of Eimeria maxima, useful for preparing a vaccine against Eimeria infection
                                                                                                                                                                        Eimeria maxima; 250 kDa antigen; sporozoite; merozoite; infection; vaccine; antiparasitic; gene therapy; immunodominant; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 7987 BP; 2022 A; 2217 C; 2370 G; 1378 T; 0 other;
                                                                                                                                       Eimeria maxima 250 kDa protein encoding cDNA SEQ ID NO:1.
                                                                                                                                                                                                                                                                                         Location/Qualifiers
3..7985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wallach M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 3; Fig 6; 198pp; English.
                    ABZ22976 standard; cDNA; 7987 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-JUL-2002; 2002WO-US21237.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-JUL-2001; 2001US-303670P
                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Smith NC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-201556/19.
P-PSDB; ABP56958.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (WITC/) WITCOMBE D. (SMIT/) SMITH N C. (WALL/) WALLACH M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO2003004684-A2
                                                                                                                                                                                                                                      Eimeria maxima.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Witcombe D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-JAN-2003.
                                                                                              10-APR-2003
                                                         AB222976;
ABZ22976/c
```

```
The present invention describes a nucleic acid (I) comprising a sequence encoding a 250 kDa polypeptide from Sporozoites/Merozoites of Eimeria maxima or its homologue or complement. Also described: (I) a vector comprising the nucleic acid; (2) a host cell comprising the nucleic acid; (2) a host cell comprising the nucleic acid; (3) a producing a recombinant 250 kDa polypeptide; (6) a recombinant polypeptide; (7) a vaccine against E. tenella, E. acervulina, E. nectrix, E. praecox, E. maxima, E. mitis polypeptide; (6) a recombinant polypeptide; (7) a vaccine against E. E. brunetti or a microoganism expressing an immunologically cross-reactive antigen; (9) conferring upon a newborn subject against infection by Eimeria, or a microorganism expressing an immunologically cross-reactive antigen; (9) conferring upon a newborn subject of an avian species material immunity against infection by Eimeria, (10) a fertilised egg from an avian species having an air sac, where the air sac is inoculated with the vaccine; and (11) reducing the output of Eimeria oocytes in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New nucleic acid comprising a sequence encoding a 250 kDa polypeptide from sporozoites/merozoites of Eimeria maxima, useful for preparing a vaccine against Eimeria infection
                                  Gaps
                                                                                                                                                                                                                                                                                                                               Eimeria maxima; 250 kDa antigen; sporozoite; merozoite; infection;
                                  ..
0
Length 7987;
                                                                                                                                                                                                                                                                                             E. maxima immunodominant protein encoding cDNA SEQ ID NO:25.
                                                                                      3011 TICTICTGCGCACTCATCAATGTCTTGGCAGCCTGCCTCGCCA 2969
                                  Indels
                                                                    4
                                                                    7 TICICICACGCICICATCGCICICGCCCCCCCCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "immunodominant protein"
Query Match 45.8%; Score 23.8; DB 25; Best Local Similarity 72.1%; Pred. No. 1.3e+02; Matches 31; Conservative 0; Mismatches 12;
                                                                                                                                                                                                                                                                                                                                               vaccine; antiparasitic; gene therapy; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
231..7313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wallach M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 5; Fig 29; 198pp; English
                                                                                                                                                                        ABZ22984/c
ID ABZ22984 standard; CDNA; 7990 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-JUL-2002; 2002WO-US21237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-JUL-2001; 2001US-303670P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= a
/product=
231..308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= b
309..7310
                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Smith NC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2003-201556/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (WITC/) WITCOMBE D. (SMIT/) SMITH N C. (WALL/) WALLACH M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; ABP56972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO2003004684-A2.
                                                                                                                                                                                                                                                                                                                                                                                 Eimeria maxima.
                                                                                                                                                                                                                                                           10-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Witcombe D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-JAN-2003.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                          ABZ22984;
                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                  g
                                                                                                                                                                                                          ઠે
```

"module 3 of SorB'

```
misc_feature
                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                          24-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                               09-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                             08-JUN-1994;
                                                                                                                                                                                                                                                                                       US5716849-A
                                                                                                                                                                                                                                                                                                                           10-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA58471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 24
AAA58471
       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
faeces from a newborn subject of an avian species. (I) has antiparasitic activity and can be used in a vaccine and in gene therapy. The nucleic acid is useful for preparing a vaccine against E. tenella, E. acervulina, E. necatrix, E. praecox, E. maxima, E. mitis or E. brunetti infection.

The present sequence encodes an E. maxima immunodominant protein, which
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Polyketide synthase; PKS; biosynthesis; soraphen; SorR; SorA; SorB; SorM; biosynthetic module; beta-ketoacylsynthase; acyltransferase; ketooreductase; beta-ketone processing domain; cytostatic agent; antimicrobial agent; phytopathogenic fungi; transgenic plant; biological control; se.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note= "gene product is highly homologous to
type I PKSs that are known to be involved
in the synthesis of polyketide compounds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The soraphen biosynthesis gene cluster from Sorangium cellulosum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "gene product highly homologous to the reductase domains of type I PKSs such as eryA from Saccharopolyspora erythraea"
                                                                                                                                                                                                            .;
0
                                                                                                                                                                       Length 7990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ...vee "gene product is highly homologous to
type I PKS genes"
/*par. 24556
                                                                                                                                Sequence 7990 BP; 2022 A; 2215 C; 2375 G; 1378 T; 0 other;
                                                                                                                                                                                                                                                                  7 TICTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                 / Match 45.8%; Score 23.8; DB 25; Local Similarity 72.1%; Pred. No. 1.3e+02; Ne 31; Conservative 0; Mismatches 12;
                                                                                            used in an example from the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= c
/note= "module 1 of SorA"
7203..12884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *tag= e
note= "module 3 of SorA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           '*tag= d
'note= "module 2 of SorA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note= "module 1 of SorB'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    oĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24638..30820
/*tag= i
/note= "module 2 o
30881..35446
/*tag= j
                                                                                                                                                                                                                                                                                                                                                                                AAV05287 standard; DNA; 49377 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= a
/product= SorR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SorA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3455..19616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9871..46318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..46318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= g
/product= :
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      927..19874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= b
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    942..7115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sorangium cellulosum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-MAY-1998
                                                                                                                                                                       Ouery Match
                                                                                                                                                                                                                                                                                                                                                                                                                     AAV05287;
                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                              A STATE OF THE STA
 8888888888
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                               셤
```

```
The present sequence contains a cluster of genes that encode polyketide synthases (PKSs) that are involved in the synthesis of soraphens in Soranglum cellulosum. The proteins encoded by the present sequence are Soranglum cellulosum. The proteins encoded by the present sequence are SorR, SorA, SorB and SorM. SorA and SorB contain biosynthetic modules which contain a beta-ketoacylysuchase, an acyltransferase, a ketoreductase and an acyl carrier protein domain, as well as beta-ketone processing domains. S. cellulosum soraphens are useful as a cytostatic and antimicrobial agent active against phytopathogenic fungi. Soraphen-producing transgenic plants or biological control agents can also be produced, which may reduce crop losses and nutritional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                   "gene product is homologous to the
methyltransferase from Streptomyces
hygroscopicus that is involved in
the synthesis of the polyketide rappamicin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLM gene cluster; bleomycin gene cluster; polyketide metabolite; bleomycin; bleomycin analogue; holo-carrier protein; thiazolidine; thiazoline; bithiazoline; microbial metabolite; sugar; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleotide sequence of the bleomycin (BLM) gene cluster ORFs 8-30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA encoding Sorangium cellulosum polypeptide(s) - used for, e.g. biosynthesis of soraphen useful as antimicrobial agent against phytopathogenic fungi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 19; Length 49377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 49377 BP; 7247 A; 19522 C; 14477 G; 8131 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              deprivation for local populations in many parts of the world
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schupp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.8%; Score 23.8; DB 19; Length 72.1%; Pred. No. 1.6e+02; Live 0; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 GTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ryals JA,
                                                                                                                                                     SorB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Beck JJ, Hill DS, Ligon JM, Neff S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 2; Columns 47-90; 64pp; English.
                                                       "module 4 of
                                                                                                                                                  "module 5 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BP.
                                                                                                                                                                                                                   /*tag= m
/product= SorM
/note= "gene p)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (NOVS ) NOVARTIS FINANCE CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAA58471 standard; DNA; 58857
..40114
                                                                                       40190..46318
                                                                                                                                                                               46851..47891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94US-0258261.
96US-0729214.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93WO-US07954.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96US-0764233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 72.1
Matches 31, Conservative
                                                                                                                    /*tag=
/note= '
                         /*tag=
/note= '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1998-158369/14.
```

us-10-081-935-1.rng

```
/transl_except= (pos: 1..3, aa: Met)
/note= "ORF 15; encodes AAB07571"
30998..52386
                                                                                                                                                                                                                                                                                                                                                        except= (pos: 1..3, aa: Met) "ORF 19; encodes AAB07567"
                                                                                                                                                                                                                                                                                                                                                                                                                                              except= (pos: 1..3, aa: Met)
"ORF 16; encodes AAB07570"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            except= (pos: 1..3, aa: Met)
"ORF 14; encodes AAB07572"
                                      /*tag= a
/transl_except= (pos: 1..3, aa: Met)
/note= "ORF 30; encodes AAB07556"
                                                                     /*tag= b
/transl_except= (pos: 1..3, aa: Met)
/note= "ORF 29; encodes AAB07557"
                                                                                                                                    transl except= (pos: 1..3, aa: Met)
                                                                                                                                                                                                                                           transl except= (pos: 1..3, aa: Met)
note= "ORF 23; encodes AAB07563"
                                                                                                                                                                                                                                                                                                                         except= (pos: 1..3, aa: Met)
"ORF 20; encodes AAB07566"
                                                                                                                                                                                                                                                                                                                                                                                        _except= (pos: 1..3, aa: Met)
"ORF 18; encodes AAB07568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "ORF 12; encodes AAB07574"
54187..55824
                                                                                                                                                                                           "ORF 25; encodes AAB07561"
                                                                                                                                                                                                                                                                   *tag= i
note= "ORF 22; encodes AAB07564"
                                                                                                                                                                                                                                                                                                 note= "ORF 21; encodes AAB07565"
                                                                                                                                                                                                                                                                                                                                                                                                                       "ORF 17; encodes AAB07569"
                                                                                                             'note= "ORF 28; encodes AAB07558"
                                                                                                                                                                     note= "ORF 26; encodes AAB07560"
                                                                                                                                                                                                                  "ORF 24; encodes AAB07562"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             encodes AAB07573"
                      cocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      *tag= r
note= "ORF 13;
                                                                                                                                                                                                                                                                                                                                 note= "ORF 2
                                                                                                                                                                                                                                                                                                                                                                                                 note= "ORF 1
9301..47181
                                                                                                                                                                                                                                                                                                                                                                                                                                                       note= "ORF 1
19982..51001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53018..54190
                                                                                                                                                                                                                            1010..24666
                                                                                                                                                                                                                                                          ..32690
                                                                                                                                                                                                                                                                                  2893..34830
                                                                                                                                                                                                                                                                                                          ..35804
                                                                                                                                                                                                                                                                                                                                                                         7299..39215
                                                                                                                                                                                                                                                                                                                                                                                                                       note= "ORF 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52383..52946
                                                                                                                                                                            2291..15491
                                                                                                                                                                                                    5488..21013
                                                                                                                                                   806..12294
                                                                                                                     1527..5593
                                                                                             767..3486
                                                                                                                                                                                                                                                                                                                                                                                                                *tag= n
                                                             ..2309
        Streptomyces verticillus.
                                                                                                                                                                                                                                  /*tag= }
/transl_
                                                                                                                                                                                                                                                                                                                  *tag=
transl
                                                                                                                                                                                                                                                                                                                                                 *tag=
transl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'trag=
'transl_
                                                                                                                                                                                                                                                                                                                                                                                       transl
                                                                                                                                                                                                                                                                                                                                                                                                                                              transl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transl
                                                                                                     *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                        *tag=
                                                                                                                                                             *tag=
                                                                                                                                                                                                                                                                                                                                                                  note=
                                                                                                                                                                                     *tag=
                                                                                                                                                                                                                                                                                                                                                                                 *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       notes
                                                                                                                                                                                            note=
                                                                                                                                                                                                            *tag=
                                                                                                                                                                                                                    notes
                                                                                                                                                                                                                                                           4663.
                        Key
                                                                                                                                                                                                                            SDS
                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                         SOO
                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                              CDS
                                                                                                                     CDS
                                                                                                                                                                             CDS
                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                           Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
```

```
The present sequence represents the BLM (Bleomycin) gene cluster, containing open reading frames (ORFs) 8-10. The proteins encoded by the gene cluster are useful for producing peptides and/or poolyketide metabolites, especially bleomycin or bleomycin analogues. They are also useful for chemically modifying biological molecules to produce branched methyl groups, and for coupling amino acids and fatty acids. They may be reacted with an approgramic protein and coenzyme A to produce a holo-carrier protein. The BLM gene cluster or catalytic thiazolidine, thiazolime, bithiazolime and bithiazolime, containing microbial metabolites. The BLM gene cluster may also be used to produce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAB07556, AAB07557, AAB07558, AAB07559, AAB07560, AAB07561, AAB07562, AAB07563, AAB07563, AAB07564, AAB07569, AAB07569, AAB07569, AAB07569, AAB07579, AAB07571, AAB07572, AAB07573, AAB07577, AAB07578.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New bleomycin gene cluster components useful for peptide and/or polyketide metabolites, especially bleomycin, production and for chemically modifying biological molecules -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / Match 45.8%; Score 23.8; DB 21; Length 58857; Local Similarity 66.7%; Pred. No. 1.7e+02; nes 34; Conservative 0; Mismatches 17; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAGTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 58857 BP; 7256 A; 25139 C; 19353 G; 7109 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C glutamicum coding sequence fragment SEQ ID NO: 7069.
                                                                                            /*tag= v
/transl_except= (pos: 1..3, aa: Met)
/note= "ORF 9; encodes AAB07577"
57583..58857
                                             except= (pos: 1..3, aa: Met)
"ORF 10; encodes AAB07576"
'note= "ORF 11; encodes AAB07575"
                                                                                                                                                                           /note= "ORF 8; encodes AAB07578"
                                                                                                                                                                                                                                                                                                                                                                                                      Du L, Sanchez C, Chen M, Edwards DJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 8; Page 97-136; 162pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH68534 standard; DNA; 309400 BP
                ...56093
                                                               /note= "ORF ]
56090..57586
                                                                                                                                                                                                                                                                                                        06-JAN-1999; 99US-0115435.
05-FEB-1999; 99US-0118848.
05-JAN-2000; 2000US-0477962.
                                                                                                                                                                                                                                                                         06-JAN-2000; 2000WO-US00445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                    (REGC ) UNIV CALIFORNIA.
                                             /transl
                                                                                                                                                            '*tag≃
                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-465974/40
                                                                                                                                                                                                           WO200040704-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-SEP-2001
                                                                                                                                                                                                                                           13-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAH68534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10310
                                                                                                                                                                                                                                                                                                                                                                                                        Shen B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                CDS
                                                                               CDS
                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAH68534
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     XEXEXEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

Ren F;

Zhao QA, I Ghosh M;

ich RW, Asundi V, Zhang J, Zl Yamazaki V, Chen R, Wang Z, B D, Drmanac RT;

Goodrich RW, Wang D,

```
New polynucleotides comprising sequences assembled from expressed agequence tags (ESTS), useful for treating cell-proliferative, neurodegenerative, autoimmune, genetic, myeloid or lymphoid, or platelet or coagulation disorders
                                                                                                                                                                                                                                                                                                                                                                    Claim 1; SEQ ID NO 605; 1012pp + Sequence Listing; English.
                                                                                           05-MAR-2002; 2002WO-US05095
                                                                                                                          05-MAR-2001; 2001US-0799451
                                                                                                                                                                                   Tang YT, Zhou P, Goodri
Xue AJ, Yang Y, Ma Y,
Wehrman T, Wang J, Wang
                                                                                                                                                                                                                                               WPI; 2002-759812/82
                                                                                                                                                      (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                               P-PSDB; ABP69506
                               WO200270539-A2
    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-FEB-2003
                                                             12-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABX34289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABX34289/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequences from the Coryneform bacterium Corynebacterium glutamicum. These are useful for identifying the mutation point of a gene derived from a mutant of coryneform bacterium, measuring expression amount and analysing the expression profile or expression pattern of a gene derived from coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium, Coryneform bacterium, and identifying a homologue of a gene derived from coryneform bacterium, Coryneform bacterium, coryneform bacterium, packers and organic acids, on ucleic acids, ucleanins, saccharides and organic acids, in the examplification of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; genome mapping; gene therapy; food supplement; virus; fungus; cell-proliferative disorder; neurodegenerative disease; bacterial; Parkinson's disease; Alzheimer's disease; autoimmune disease; multiple sclerosis; diabetes; genetic disorder; wound; burn; infection; arthritis; cytostatic; immunomodulator; nootropic; neuroprotective; antiparkinsonian; antidiabetic; immunosuppressive; dermatological; haemostatic; vulnerary; fungicide; antibacterial; virucide; protozoacide; antiarthritic; gene; 88.
                                                                                                                                                                                                                                                                                                                                 Novel polynucleotides derived from Coryneform bacteria, for identifying
                                                                                                                                                                                                                                                                                                                                                   mutation point of a gene, measuring expression of a gene, analysing expression profile or pattern of a gene and identifying homologous gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                          Mizoguchi H, Ando S, Hayashi M, Ochiai K, Yokoi H;
Senoh A, Ikeda M, Ozaki A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    218393 TTCAGATCGGATACGCCATCATCGGTATCCGCGCAGCAGGTCTCGCCGCG 218443
Coryneform bacterium; amino acid synthesis; vitamin; saccharide; organic acid synthesis; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 309400 BP; 70133 A; 86477 C; 83115 G; 69675 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 22; Length 309400;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 TGCAGTTCTCTCACGCTCTCATCGCTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; SEQ ID NO: 7069; 246pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                          present invention provides a number of nucleotide and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 45.8%; Score 23.8; DB 22; Length Best Local Similarity 66.7%; Pred. No. 2e+02; Matches 34; Conservative 0; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human polynucleotide SEQ ID NO 605.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABZ11723 standard; cDNA; 1415
                                                                                                                                                                                                                          (KYOW ) KYOWA HAKKO KOGYO KK
                                                                                                                                                                                              03-AUG-2000; 2000JP-0280988.
                                                                                                                                     18-DEC-2000; 2000EP-0127688
                                                                                                                                                                              07-APR-2000; 2000JP-0159162
                                            Corynebacterium glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           European Patent Office.
                                                                                                                                                                                                                                                                                                      WPI; 2001-376931/40.
                                                                          EP1108790-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-JAN-2003
                                                                                                       20-JUN-2001
                                                                                                                                                                                                                                                        Nakagawa S,
Tateishi N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABZ11723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 26
 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
The invention relates to an isolated polynuclectide (I) comprising a nucleotide sequence selected from any of 948 sequences

(Mazilli9-Mazil066) or their mature protein coding portion, active domain coding protein or complementary sequences. The polynucleotides are useful for identifying expressed genes or for physical mapping of human genome. The encoded polypeptides (ABB68902-ABP68849) are useful as molecular weight markers as a food supplement, for generating and incorporation or Alzheimers and food supplement, for generating and incorporation of seases (call-proliferative disorders (cancer), neurodegenerative diseases

(Parkinson's or Alzheimer's disease), autoimmune diseases (multiple soll-proliferative disease), autoimmune diseases (multiple soll-proliferative disease), interfaction disorders, wound, burns, incision, closers, liver or lung fibrosis, infections (bacterial, viral, fungal, parasitic), arthritis, etc.

Note: The sequence data for this patent did not form part of the printed per specification, but was obtained in electronic format directly from MIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Leinamycin biosynthesis gene cluster; Lmn; open reading frame; ORF; anti-tumour antibiotic; broad spectrum antimicrobial activity; Gram-positive; Gram-negative bacteria; chemical modification; metabolite; apo-carrier protein; holo-carrier protein; tumour; polyketide; hybrid polypeptide/polyketide metabolite; Lnm production;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 23.6; DB 24; Length 1415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29 Aráchárraccececececraracecececerecereces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1415 BP; 337 A; 490 C; 386 G; 202 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S. atroolivaceus leinamycin biosynthesis gene cluster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABX34289 standard; DNA; 135638 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Streptomyces atroolivaceus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 69.6 es 32, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene; da
```

(first entry)

```
Novel human cytomegalovirus Intron A fragment for use in expression constructs, lacks full-length Intron A sequence, and enhance expression levels when present in expression constructs
                                                                                                                                                             Cytomegalovirus; CMV; expression construct; gene therapy; cytostatic; human cytomegalovirus; hCMV; malignant cancer; immunisation; intron A;
                                                                                                                         pCON3 deletion mutant construct intron A fragment.
                 standard; DNA; 145 BP.
                                                                                                                                                                                                                                                                                                                                               12-OCT-2001; 2001WO-US32050
                                                                                                                                                                                                                                                                                                                                                                               13-OCT-2000; 2000US-240502P
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thudium K, Selby M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-452346/48.
                                                                                                                                                                                                                                                                                                                                                                                                                     (CHIR ) CHIRON CORP.
                                                                                                                                                                                                                                                                       WO200231137-A2.
                                                                                                                                                                                                                                     Unidentified.
                                                                                       10-SEP-2002
                                                                                                                                                                                                                                                                                                           18-APR-2002.
                                                     AAD38151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABN20845;
                 AAD38151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABN20845
 4AD38151
                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to the isolation of the Streptomyces atroolivaceus leinamycin (Lnm) biosynthesis gene cluster containing 11 per reading frames (ORFs -15 through -1, ORFs InmA through InmA. and ORFs +1 through +9). Celnamycin is a novel anti-tumour antibiotic produced by several Streptomyces species. It exhibits broad spectrum antimicrobial activity against Gram-positive and Gram-negative bacteria, but not against fungl The polypeptides encoded by the Lnm biosynthesis gene cluster ORFs are useful for chemically modifying a molecule in a host cell. The host cell is a bacterium or evaspencial is a mendogenous metabolite produced by the host cell. The molecule is an endogenous metabolite produced by the host cell or exogenously supplied metabolite, or an amino acid, and the polypeptides is a peptide synthetase or amino transferase. The polypeptides and/or the Lnm gene cluster are useful for converting an apo-carrier protein to a holo-carrier protein. Lnm shows potent and/or polyketide, and/or hybrid polypeptide/polyketide metabolites. The fungene cluster is useful to myergulate endogenous Lnm shows and/or polyketide, and/or hybrid polypeptide/polyketide metabolites. The Lnm gene cluster is useful to upregulate endogenous Lnm production to permit Lnm production in cells and/or to make various modified Lnm. Compination its analogue, or other polyketide, peptide or hybrid polyketide metabolites concleve permit Lnm production in cells and/or to make various modified Lnm. The Lnm spenent sequence represents the S. atroolivaceus leinamycin higher cluster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                              WPI, 2003-018907/01.

P-PSDB; ABUL1341, ABUL1342, ABUL1353, ABUL1351, ABUL1352, ABUL1353, ABUL1354, ABUL1354, ABUL1352, ABUL1353, ABUL1354, ABUL1356, ABUL1356, ABUL1356, ABUL1356, ABUL1356, ABUL1356, ABUL1360, ABUL1361, ABUL1362, ABUL1363, ABUL1363, ABUL1364, ABUL1364, ABUL1364, ABUL1376, ABUL1377, ABUL1377, ABUL1377, ABUL1377, ABUL1378, ABUL1378, ABUL1378, ABUL1378, ABUL1378, ABUL1377, ABUL1378, ABUL1377, ABUL1378, ABUL1378, ABUL1389, ABUL1389, ABUL1380, ABUL1381, ABUL1381, ABUL1391, ABUL1391, ABUL1391, ABUL1392, ABUL1393, ABUL1393, ABUL1393, ABUL1393, ABUL1393, ABUL1393, ABUL1394, ABUL1395, ABUL1398, ABUL1399, ABUL1400, ABUL1401, ABUL1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel gene cluster responsible for synthesis of leinamycin in
Streptomyces atroolivaceus useful for making various peptide and/or
polyketide, and/or hybrid polypeptide/polyketide metabolites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 23.6; DB 25; Length 135638;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 135638 BP; 18570 A; 49096 C; 49039 G; 18933 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34257 CGCTCTCGCCGCGCTCGGCGCCCTGCTCGCCGGTG 34220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15 CGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 2.1e+02;
0; Mismatches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 6; Page 81-127; 185pp; English.
                                                                                                                                                                              KYOWA HAKKO KOGYO KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76.3%;
                                                                                     22-MAR-2002; 2002WO-US08937.
                                                                                                                       26-MAR-2001; 2001US-278935P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              biosynthesis gene cluster.
                                                                                                                                                                                                                  Tang G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 76.3
Matches 29; Conservative
                                                                                                                                                           (REGC ) UNIV CALIFORNIA.
(KYOW ) KYOWA HAKKO KOGY
                                                                                                                                                                                                                                                                                                                                                                           ABU11382, ABU11383, A
ABU11389, ABU11390, A
ABU11396, ABU11397, A
ABU11403, ABU11404, A
ABU11410, ABU11411.
                                                                                                                                                                                                                  Cheng Y,
                                                     03-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                  Shen B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
ઠે
```

Ulmer J;

```
Human; open reading frame; ORFX; gene therapy; cancer; cirrhosis; hyperproliferative disorder; psoriasis; benign tumour; haemorrhage; degenerative disorder; osteoarthritis; neurodegenerative disorder; cardiovascular disease; diabetes mellitus; systemic lupus erythematosus; hypertension; hypothyroidism; cholesterol ester storage disease;
                                               The invention relates to cytomegalovirus (CMV) intron A fragments for use in expression construct for expressing gene products. Recombinant expression construct is useful for producting a recombinant polypeptide. Human cytomegalovirus (bCMV) intron A fragment is useful in expression constructs to express a wide variety of substances including peptides. It is also useful for treating a variety of malignant cancers, and for producing proteins useful for prevention, treatment and/or diagnosis of a wide variety of diseases. Recombinant expression construct is used in nucleic acid immunisation and gene therapy. The present sequence is pCOM3 deletion mutant construct intron A fragment used in the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ·.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.0%; Score 23.4; DB 24; Length 145; llarity 67.3%; Pred. No. 1.1e+02; Conservative 0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human ORFX polynucleotide sequence SEQ ID NO:10167.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 145 BP; 27 A; 46 C; 27 G; 45 T; 0 other;
Disclosure; Page 43; 44pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABN20845 standard; cDNA; 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 Similarity
33; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-JUN-2002
```

```
Auxins are plant hormones that influence plant behaviour and development e.g. vascular tissue differentiation, apical development, tropic responses and organ (e.g. flower, laef) development. The present invention relates to corn auxin transport protein coding sequences and proteins. The present sequence is one such coding sequence. This sequence may be used to medulate root development, e.g. to produce a more robust sequence may be useful for gene mapping (e.g. for plant breeding) and to identify loss of function mutants. The protein encoded by the present sequence may be useful for raising specific antibodies, for the detection of auxin transport proteins and to design and/or identify specific inhibitors of auxin transport proteins, potentially useful as herbicides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mitomycin; biosynthesis; mitosane ring system; antibiotic; anti-cancer; anti-inflammatory; immune-enhancer; immunosuppressant; asthma; chronic obstructive pulmonary disease; respiratory inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New nucleic acid sequences encoding new auxin transport proteins, useful for modulating root growth of plants and to screen for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mitomycin biosynthetic gene cluster related alpha amylase orf20.
      Corn auxin transport protein clone cillc.pk001.b7 DNA sequence
                                                                      root development; gene mapping; plant breeding; herbicide; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 21; Length 855;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 855 BP; 152 A; 308 C; 266 G; 129 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 TCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                    Tao Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 23.4; DB 21
Pred. No. 1.4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                  Cahoon RE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 2; Page 93; 94pp; English.
                                                                                                                                                                                                                                                                                                                                (DUPO ) DU PONT DE NEMOURS & CO (PION-) PIONEER HI-BRED INT INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                  Bruce WB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC55847 standard; DNA; 2466
                                                                                                                                                                                                                                              03-MAY-2000; 2000WO-US12061.
                                                                                                                                                                                                                                                                                          99US-0133040.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ch 45.0%;
1 Similarity 73.2%;
30; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-JAN-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fungicide; pesticide; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Streptomyces lavendulae.
                                                                                                                                                                                                                                                                                                                                                                                                  Orozco EM, Weng Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-687647/67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; AAB26952
                                               Auxin transport
                                                                                                                                                          WO200068389-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200053737-A2.
                                                                                                                                                                                                                                                                                          07-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      herbicides -
                                                                                                                                                                                                     16-NOV-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-SEP-2000.
                                                                                                                    Zea mays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC55847;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 31
AAC55847
      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention describes substantially purified human proteins

(referred to as open reading frame, ORFX, where X is 1-11491 (see Table 1
in the specification). ABN15762 to ABN27252 encode the human ORFX

proteins given in ABP00101 to ABP11500. ORFX proteins are useful for

treating or preventing a pathology associated with an ORFX-associated

disorder in humans, and in the manufacture of a medicament for treating a
syndrome associated with ORFX-associated disorder. ORFX polynucleotide

csquences can be used in gene therapy. ORFX sequences can be used in the

treatment of cancer, hyperproliferative disorders, cirrhosis of liver,

psoriasis, benign tumours, keloid, degenerative disorders related to organ

transplantation, cardiovascular diseases, diabetes mellitus, systemic

cransplantation, cardiovascular diseases, diabetes mellitus, systemic

cransplantation, ardiovascular diseases, diabetes mellitus, systemic

craring disease, autoimmune thyroiditis, myasthenia gravis, graft-versus-host

disease and autoimmune inflammatory eye disease. ORFX proteins are also

cuseful for treating burns, incisions, ulcers, for treating osteoporosis,

bone degenerative disorders, or periodontal disease, and for gut

cransfined in tegeneration and treatment of lung or liver fined for men and conditions resulting for the conditions results and conditions resulting for the conditions resulting for the conditions results or condit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The sequence data for this patent did not form part of the printed fication, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      reperfusion injury in various tissues and conditions resulting from systemic cytokine damage.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel human polypeptides and polynucleotides useful for diagnosing, preventing and treating cardiovascular disease, neurodegenerative, hyperproliferative disorders and autoimmune disorders
immune deficiency, immune disorder, infectious disease, autoimmune disorder, rheumatoid arthritis; autoimmune thyroiditis; myasthenia gravis; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 450 BP; 86 A; 106 C; 123 G; 133 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ch 45.0%; Score 23.4; DB 24; 1. Similarity 81.8%; Pred. No. 1.3e+02; 27; Conservative 0; Mismatches 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145 CGCTCTCATTGCCCTGGTGCTGCTGCCTGGC 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15 CGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; SEQ ID 10167; 1037pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAA94737 standard; DNA; 855 BP
                                                                                                                                                                                                                     29-MAY-2001; 2001WO-US10836.
                                                                                                                                                                                                                                                              30-MAY-2000; 2000US-206132P.
29-AUG-2000; 2000US-228716P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                         Shimkets RA, Leach MD;
                                                                                                                                                                                                                                                                                                                              (CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-106308/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; ABP05093.
                                                                                                                                 WO200192523-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      specification,
                                                                                                                                                                            06-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA94737;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 30
AAA94737
```

ö

Gaps

ö

ò 음

(SHER/)

```
The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster expressed polynucleotide SEQ ID NO 19811.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 23; Length 2840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; SEQ ID NO 36251; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2774 TCCTCCCGATCCTCGGTGTCCTCGCTGCCGCCCTCGCCCG 2814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2840 BP; 671 A; 724 C; 723 G; 722 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10 TCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 23.4; DB 23
Pred. No. 1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Myers EW;
                                                                                                                                                                                                                                                              Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABL08443 standard; cDNA; 5736 BP
                                                                                                                                                                                                                                                              PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-MAR-2000; 2000US-191637P.
                                                                                            23-MAR-2001; 2001WO-US09231
                                                                                                                                           23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 73.2'
Matches 30; Conservative
                                                                                                                                                                                                                                                                ፫
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pharmaceutical; gene; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams M,
                                                                                                                                                                                                                                                              Adams M,
                                                                                                                                                                                                                                                                                                             WPI; 2001-656860/75.
                                                                                                                                                                                                              (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                   P-PSDB; ABB69820
WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                  interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-SEP-2001.
                                               27-SEP-2001
                                                                                                                                                                                                                                                                Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABL08443;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABL08443
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention relates to isolated and purified nucleic acid molecules from the mitomycin biosynthetic gene cluster. Mitomycins are a group of natural products that contain a variety of functional groups, including amino benzoquinone and axitidine ring systems. The S. lavendulae mitomycin biosynthetic gene cluster comprises 47 mitomycin genes spanning 5skb of DNA. The invention includes an expression cassette comprising a mitomycin biosynthetic gene operably linked to a promoter, and host cells transformed with the cassette. The nucleotide, and protein sequences and the transformed host cells of the invention result in antiasthmatic, antiinflammatory, cytostatic, immunomodulatory, and nucleotide sequences are used to elucidate the molecular basis for the biosynthesis of the mitosane ring system, as well as to engineer the biosynthesis of novel natural products, e.g. antibiotics, anti-inflammatory agents, anti-cancer agents, crea gents, cobstructive pulmonary disease as well as other disease involving respiratory inflammation, or cholesterol-lowering agents or s crop protection agents (e.g., fungicides or insecticides) as well as Experiment or Subjoymers e.g., in packaging or biomedical applications, or to engineer PHA monomer synthases. Sequences AACSS912-CSS814, AACSS812-CSS849 and AACSS828 and and encoded proteins. Sequences AACSS812-CSS814, and the additional policy or the additional policy and the additional policy or species and encoded proteins. Sequences AACSS812-CSS814, and the additional policy or the additional policy or the additional policy or the additional policy or sequences and encoded proteins. Sequences AACSS812-CSS814, and the additional policy or the additional policy or the additional policy or sequences and encoded proteins. Sequences AACSS812-CSS814, and the additional policy or the additional policy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                              Novel nucleic acid molecule comprising mitomycin biosynthetic gene cluster useful for cloning mitomycin biosynthetic genes for elucidating the molecular basis of mitosane ring system biosynthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster expressed polynucleotide SEQ ID NO 36251.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45.0%; Score 23.4; DB 21; Length 2466; 73.2%; Pred. No. 1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2466 BP; 460 A; 860 C; 822 G; 324 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCTGCCGCCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                    Sheldon PC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cloning of the mitomycin biosynthetic genes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 1; Page 324-325; 399pp; English.
                                                                                                                                                                                                                                                                                    He M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABL13923 standard; cDNA; 2840 BP
                                                                                                                                                                                                                                                                                  Varoglu M,
                        10-MAR-2000; 2000WO-US06394
                                                                     99US-0266965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match
Best Local Similarity 73.2
Matches 30; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila; developmental
pharmaceutical; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                  UNIV MINNESOTA
                                                                                                                                                                                                                                                                                    Mao Y,
                                                                                                                                         SHERMAN D H.
                                                                                                                                                                                                                                       SHELDON P C.
                                                                                                                                                                                                                                                                                                                                   WPI; 2000-601980/57
                                                                                                                                                                                        VAROGLU M.
                                                                                                                                                                    MAO Y
                                                                     12-MAR-1999;
                                                                                                                                                                                                              HE M.
                                                                                                                                                                                                                                                                                    Œ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48
                                                                                                                     ( DNIM)
                                                                                                                                                                                        (VARO/)
(HEMM/)
                                                                                                                                                                                                                                          SHEL/)
                                                                                                                                                                                                                                                                                       Sherman
```

RESULT 32

8

ò

ö

Gaps

```
27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Venter JC,
                                                                                                                                                                                                                                                                         ABL08442;
                                                                                                                                                                                                                           RESULT 35
ABL08442/c
  8888888888
                                                                                                                                                                  ò
                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                 ö
                                                                                                                    13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention is useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of
                                                                                                                                                                                             The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                  The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL61840-ABL16175) and the encoded proteins
                                  New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster expressed polynucleotide SEQ ID NO 36248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                       5544 CAGTICITGCAGGCTCTCGTCGTCCTCGTCGTCATCGTCGTCGTTG 5496
                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                      Length 5736;
                                                                                                                                                                                                                                                                                                                     25
                                                                              Claim 1; SEQ ID NO 19811; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                  4 CAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; SEQ ID NO 36248; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                               Sequence 5736 BP; 1503 A; 1718 C; 1588 G; 927 T; 0 other;
                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                    ch 45.0%; Score 23.4; DB 23;
1 Similarity 67.3%; Pred. No. 1.7e+02;
33; Conservative 0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Myers EW
                                                                                                                                                                                                                                                                                                                                                                                                    BP
                                                                                                                                                                                                                                                                                                                                                                                                   ABL13922 standard; cDNA; 6782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-191637P.
2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated nucleic acid
genes from Drosophila and
interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pharmaceutical; gene; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Venter JC, Adams M,
WPI; 2001-656860/75.
P-PSDB; ABB64340.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-656860/75.
                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PEKE ) PE CORP NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; ABB69819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                          ABL13922;
                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
ઠે
                                                                                                                                                                                                                                                                                                                                       셤
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is
                                                                                                                          it did not form part of the printed in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention sequences (ABL01840-ABL16175, and the encoded proteins (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL36511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABBS7737-ABB72072).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster expressed polynucleotide SEQ ID NO 19808.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                              ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
                                                                                                                                                                                                                                                                                                      Length 6782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 45.0%; Score 23.4; DB 23; Length 9577; Best Local Similarity 67.3%; Pred. No. 1.8e+02; Matches 33; Conservative 0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 19808; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                   Sequence 6782 BP; 1899 A; 1548 C; 1559 G; 1776 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 9577 BP; 2647 A; 2491 C; 2387 G; 2052 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                 5716 TCCCTCCCGATCCTCGGTGTCCTCGCTGCCGCCCTCGCCCG 5756
                                                                                                                       oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                  10 TCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG
                                                                                                                                                                                                                                                                                                                                                        11;
                                                                                                                                                                                                                                                                                                Score 23.4; DB 23;
Pred. No. 1.8e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                       did not form
                                                                                                           The sequence data for this patent did not for specification, but was obtained in electronic at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                Ouery Match
45.0%; Score 23.4; Di
Best Local Similarity 73.2%; Pred. No. 1.8e-
Matches 30; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABL08442 standard; cDNA; 9577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pharmaceutical; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (PEKE ) PE CORP NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; ABB64339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
```

Sequence 18034 BP; 3203 A; 6345 C; 6150 G; 2335 T; 1 other;

တ္တ

ò

```
This invention relates to isolated and purified nucleic acid molecules
from the mitomycin biosynthetic gene cluster. Mitomycins are a group of
natural produces that contain a variety of functional groups, including
amino benzoquinone and axiridine ring systems. The S. lavendulae
canno benzoquinone and axiridine ring systems. The S. lavendulae
comprising a mitomycin biosynthetic gene cluster comprises 47 mitomycin genes
cc spanning SSkb of DNA. The invention includes an expression cassette
ccomprising a mitomycin biosynthetic gene operably linked to a promoter,
and host cells transformed with the cassette. The nucleotide, and protein
cc antibiotic activities. The nucleotide sequences are used to elucidate the
antibiotic activities. The nucleotide sequences are used to elucidate the
cc molecular basis for the biosynthesis of the mitosane ring system, as well
as to engineer the biosynthesis of novel natural products, e.g.
antibiotics, anti-inflammatory agents, anti-cancer agents,
antibiotics, anti-inflammatory agents anti-cancer agents,
cobstructive pulmonary disease as well as other disease involving
creapiratory inflammation, or cholesterol-lowering agents or as crop
protection agents (e.g., fungicides or insecticides) as well as
bipolymers, e.g., in packaging or biomedical applications, or to engineer
CC blolymers, e.g., in packaging or biomedical applications,
CAACSSBSO-CSSBSG and AACSSBSO-CSSBSG and AACSSBSO-CSSBSG preseent PRA primers used in the
CC cloning of the mitomycin biosynthetic genes.
                                                                                                                                                                                                                                                                                     Mitomycin; biosynthesis; mitosane ring system; antibiotic; anti-cancer; anti-inflammatory; immune-enhancer; immunosuppressant; asthma; chronic obstructive pulmonary disease; respiratory inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel nucleic acid molecule comprising mitomycin biosynthetic gene cluster useful for cloning mitomycin biosynthetic genes for elucidating the molecular basis of mitosane ring system biosynthesis
                  8249 CAGTTCTTGCAGGCTCTCGTCGTCCTCCTCGTCGTCGTCGTCGTTG 8201
4 CAGITCICICACGCICICATCGCICTCGTCGCTCCCGCCTCGCCAGIG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sheldon PC;
                                                                                                                                                                                                                                                   Complete Mitomycin ORF 11-22 nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          He M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 21; Figure 23; 399pp; English
                                                                                                                                  AAC55841 standard; DNA; 18034 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Varoglu M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10-MAR-2000; 2000WO-US06394.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0266965.
                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                   fungicide; pesticide; ds
                                                                                                                                                                                                                                                                                                                                                                                          Streptomyces lavendulae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UNIV MINNESOTA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SHERMAN D H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SHELDON P C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sherman DH, Mao Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-601980/57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VAROGLU M.
                                                                                                                                                                                                                                                                                                                                                                                                                              WO200053737-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MAO Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-MAR-1999;
                                                                                                                                                                                                                19. JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뜨
                                                                                                                                                                       AAC55841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HEMM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MINU )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SHER/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARO/)
                                                                                              RESULT 36
                                                                                                                                                                         g
```

```
The invention relates to a composition comprising a human GDP-mannose 4.6-dehydratase (GM4,6D) peptide. The peptide is useful for identifying GM4,6D inhibitors. GM4,6D inhibitors are useful for reducing inflammation in a mammalian subject and for treating or ameliorating diseases affected by the level of cellular fucosylation or diseases affected by the transplant rejection. Asthma, sepsis, reperfusion injury, stroke or infection. The GM4,6D peptide or a polynucleotide encoding it is also useful for manufacturing complex carbohydrates and as targets for infection. The GM4,6D peptide or a polynucleotide encoding it is also useful for manufacturing complex carbohydrates and as targets for creaming small molecule antagonists of the activity of the enzyme. The polynucleotide is useful in developing an assay for defects in the enzyme, as well as in gene replacement therapy. Sequences the saving GM4,6D peptides of the invention.

CM2 MBX17942-MBX17944 and ABX17947-ABX33716 represent DNA molecules encoding human GM4,6D peptides for this patent did not form part of the printed specification but was obtained in electronic format directly from USPTO
                                                ö
                                                                                                                                                                                                                                                                                                                                                                                      cellular fucosylation; glycoconjugate fucosylation; transplant rejection; arthritis; asthma; sepsifus; reperfusion injury; stroke; inflection; complex carbohydrate; gene replacement therapy; immunosuppressive; antiinflammatory; antiarthritic; antibacterial; cerebroprotective;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New composition comprising GDP-mannose 4,6-dehydratase (GM4,6D) peptide, for manufacturing complex carbohydrates, or as targets for screening GM4,6D antagonists for treating e.g. arthritis, or transplant
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                  Human; GDP-mannose 4,6-dehydratase; GM4,6D; gene; ss; inflammation;
         Length 18034;
                                              ö
                                                Indels
                                                                                                         11562 CGCTGCCGCCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 11602
                                                                                   9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                               Human GDP-mannose 4,6-dehydratase (GM4,6D) DNA #12665
Score 23.4; DB 21;
Pred. No. 2e+02;
                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure, SEQ ID NO 12667; 6pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              at seqdata.uspto.gov/sequence.html.
                                                                                                                                                                                                                  ABX30608 standard; CDNA; 271 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kumar R;
             45.0%;
73.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96US-0753233.
97US-0984246.
98US-0149674.
99US-0333177.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-JUN-2001; 2001US-0878574
                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                antiasthmatic; vasotropic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GEMY ) GENETICS INST INC.
                                                30; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kriz R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2003-066673/06.
             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US2002110548-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                            11-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sullivan F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rejection
                                                                                                                                                                                                                                                       ABX30608;
                                                  Matches
                                                                                                                                                                                 RESULT 37
                                                                                                                                                                                                   ABX30608,
                                                                                                                                                                                                                      a
                                                                                     ò
```

Sequence 271 BP; 76 A; 49 C; 69 G; 76 T; 1 other;

```
ò
                       엄
                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Coding sequences (ABP63611-ABP6481 and ABQ98194-ABQ99267). The sequences were discovered in human atherogenic cells, in particular in platelets and human umbilical vein endothelial cells (HUVEC) and are expressed in many other tissues as well. Atherogenic cells are cells which have the potential to develop atherosclerotic plaques. The ORFX polypeptides and nucleic acids are useful for treating or preventing a pathological condition associated with an ORFX-associated disorder, e.g. cancer, cardiovascular disease, allergy, autoimmune disease, wound healing, blood coagulation disorders or inflammatory disorders.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the USFTO web site at seqdata.uspto.gov/sequence.html?DocID=20020082206.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to novel human ORFX polypeptides and their
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New polypeptide designated ORFX are present in human atherogenic cells and are useful to prevent and treat ORFX-associated disorders including cancer, allergy, wound healing or autoimmune, cardiovascular or inflammatory disease
                                                                                                                                                                                                                                               Cytostatic; Cardiant; Anti-allergic; Immunosuppressive; Vulnerary; Antiinflammatory; gene therapy; human; ORFX; atherogenic; platelet; human umbilical vein endothelial cell; HUVEC; atherosclerotic plaque; cancer; cardiovascular disease; allergy; autoimmune disease; wound healing; blood coagulation disorder; inflammatory disorder; ds.
                            Gaps
                            .;
0
  Length 271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match

44.6%; Score 23.2; DB 24; Length 450;
Best Local Similarity 77.8%; Pred. No. 1.5e+02;
Matches 28; Conservative 0; Mismatches 8; Indels 0
                           13; Indels
                                                                   21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
                                                 8 TCTCTCACGCTCTCATCGCTCTCGCTGCCGGCCTCGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 450 BP; 113 A; 113 C; 159 G; 62 T; 3 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Law
Ouery Match
44.6%; Score 23.2; DB 25;
Best Local Similarity 70.5%; Pred. No. 1.4e+02;
Matches 31; Conservative 0; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Topper JN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 2; SEQ ID 223; 78pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conley PB,
                                                                                                                                              ВР
                                                                                                                                                                                                                        Human ORF112 coding sequence.
                                                                                                                                             ABQ98305 standard; DNA; 450
                                                                                                                                                                                                                                                                                                                                                                                                            30-MAY-2001; 2001US-0867550
                                                                                                                                                                                                                                                                                                                                                                                                                                      30-MAY-2000; 2000US-208427P
                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mehraban F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (LEAC/) LEACH M D.
(MEHR/) MEHRABAN F.
(CONL) CONLEY P B.
(TOPP/) TOPPER J N.
(LAWD/) LAW D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-626554/67.
P-PSDB; ABP63742.
                                                                                                                                                                                                                                                                                                                                                       US2002082206-A1.
                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                               04-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                  27-JUN-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Leach MD,
                                                                                                                                                                       ABQ98305;
                                                                                                                    RESULT 38
ABQ98305/c
                                                                                                                                                         ò
                                                                            8
```

```
The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention is useful in developmental biology and in elucidating cell signalling and cell.cell interactions in higher enkaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell interactions -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila; developmental biology; cell signalling; insecticide;
pharmaceutical; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster genomic polynucleotide SEQ ID NO 32350.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match 44.6%; Score 23.2; DB 23; Length 867; Local Similarity 65.4%; Pred. No. 1.6e+02; Los 34; Conservative 0; Mismatches 18; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ATGCAGITCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 32350; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 867 BP; 220 A; 251 C; 207 G; 189 T; 0 other;
                        207 CTCGATCTCGGCGGTCTCGTCGCGGGCCTTCCTCGCC 172
     48
13 CACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Myers EW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP
                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABL60268 standard; cDNA; 1563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAR-2001; 2001WO-US09231
                                                                                                                                                                              ABL26959 standard; DNA; 867
                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PEKE ) PE CORP NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200171042-A2
                                                                                                                                                                                                                                                                                 26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Venter JC,
                                                                                                                                                                                                                              ABL26959;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABL60268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                           RESULT 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABL60268
ID ABL6
XX
AC ABL6
XX
DT 23-A
                                                                                                                                                     ABL26959
```

ö

ö

Gaps

```
The invention relates to an expression system (A) that provides increased expression of copper-dependent secreted proteins (I) in eukaryotic cells comprises a gene (II) that encodes (I) and at least one cooper homeostasis gene (III). (A) is used to express enzymes, especially laccase, that require copper as co-factor. (III) transports copper to the present sequence is that of the Trametes versicolor Laccase (I). encoding polynucleotide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Expression system for increased production of copper-dependent enzymes, particularly laccase, includes the gene for a copper homeostasis protein
                                 Fungi; Thal; Ctal; copper-dependent secreted protein; copper; laccase;
Trametes ATX1 homologue; copper transporting ATPase; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
44.6%; Score 23.2; DB 24; Length 1563;
Best Local Similarity 65.4%; Pred. No. 1.7e+02;
Matches 34; Conservative 0; Mismatches 18; Indels 0;
Trametes versicolor Laccase III encoding cDNA SEQ ID NO 25.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1563 BP; 271 A; 603 C; 384 G; 305 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                         Marbach-Ringhandt K, Pfaller R, Uldschmid A;
                                                                                                                                                                                                                                                                                                                                         (CONE ) CONSORTIUM ELEKTROCHEM IND GMBH.
                                                                                                                Location/Qualifiers
1..1563
/*tag= a
/product= "Laccase III"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 9; Page 46-48; 58pp; German.
                                                                                                                                                                                                                                                                       21-SEP-2000; 2000DE-1046932.
                                                                                                                                                                                                                                                                                                       21-SEP-2000; 2000DE-1046932
                                                                                 Trametes versicolor.
                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-445163/48.
P-PSDB; ABB77510.
                                                                                                                                                                                                     DE10046932-A1
                                                                                                                                                                                                                                       16-MAY-2002.
                                                                                                                   Key
```

Search completed: November 13, 2003, 07:43:16 Job time : 248 secs

ò 8

; 0

0; Gaps

Н

```
Sequence 10609, Application US/09252991A

Factor 10509, Application US/09252991A

Factor No. 6551795

GENERAL INFORMATION:

GENERAL INFORMATION:

TITLE OF INVENTION:

TITLE OF INVENTION:

FILE REFRENCE: 107196.136

CURRENT FILING DATE: 1999-02-18

FRIOR FILING DATE: 1998-02-18

FRIOR APPLICATION NUMBER: US 60/074,788

FRIOR APPLICATION NUMBER: US 60/074,190

FRIOR FILING DATE: 1998-07-27

FRIOR APPLICATION NUMBER: US 60/094,190

FRIOR FILING DATE: 1998-07-27

FRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300 CAGCTCGCTGATCCTTCGCCTCGTCGCAGCCGGCGACGTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 CAGITCICICACGCICICATCGCICICGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
US-09-252-991A-10609/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-252-991A-10364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-252-991A-10364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      651
                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 10245, A Sequence 15702, A Sequence 15670, A Sequence 1566, A Sequence 13, Appl Sequence 13, Appl Sequence 6, Appli Sequence 6, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 10364, A
Sequence 10609, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                        November 13, 2003, 07:05:30 ; Search time 57 Seconds (without alignments) 402.665 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No, is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5,
Sequence 1,
Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1,
Sequence 5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. Sequence 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 atgoagttotototoacgotot......cgotgocggcotcgcoagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn2_6/ptcdata/2/ina/5A_COMB.seq:*
/cgn2_6/ptcdata/2/ina/5B_COMB.seq:*
/cgn2_6/ptcdata/2/ina/6A_COMB.seq:*
/cgn2_6/ptcdata/2/ina/6A_COMB.seq:*
/cgn2_6/ptcdata/2/ina/PCTUS_COMB.seq:*
/cgn2_6/ptcdata/2/ina/PCTUS_COMB.seq:*
                                 version 5.1.6
- 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-10364
US-09-252-991A-10609
US-09-252-991A-10245
US-08-764-233A-1
US-09-252-991A-15702
US-09-252-991A-15574
US-09-252-991A-1556
US-09-266-965-75
US-09-266-965-75
US-09-266-965-75
US-09-266-965-75
US-09-266-965-75
US-09-443-104-6
US-08-443-104-6
US-08-443-104-6
US-08-442-859-6
US-08-442-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-443-104-5
US-08-238-130-6
US-08-442-859-5
US-08-398-489-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-539-333D-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          569978 seqs, 220691566 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                        nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                       GenCore (c) 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1485
2466
18034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5762
3903
319608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \underline{\sigma} \circ \underline{\circ} \circ \underline{\circ} \circ \underline{\circ} \circ \underline{\sigma} \circ 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB a
Maximum DB a
                                                                                                                                                                                                                                                              OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
```

52

```
Sequence 10364, Application US/09252991A
Fatent No. 6531795
GENERAL INPORMATION:
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
FRIOR FILING DATE: 1998-02-18
FRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                       Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                    Sequence 197,
                                                                                                                                                   Sequence 2
Sequence 2
Sequence 2
Sequence 1
                                                                                                           Sequence 2
                                              Sequence
                                                                                         Sequence
                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48.1%; Score 25; DB 4; Length 651; 69.4%; Pred. No. 7.1; ive 0; Mismatches 15; Indels
US-09-679-409-1
US-08-169-948B-35
US-08-48B-873-35
US-08-382-452D-35
US-08-146-770-2
US-09-146-770-2
US-09-613-084-2
US-10-678-4872-2
US-10-678-4872-2
US-10-678-488-70-11
US-08-438-870-11
US-08-438-870-11
US-08-255-391A-8265
US-09-252-391A-8265
US-09-252-391A-8265
US-09-288-416-751
US-09-283-2312
                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34; Conservative
                                                                                                                                                                                                                  1050
1050
1050
1365
703
1140
    319608
```

```
PRIOR FILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
LENGTE: 1908-07-27
LENGTE: 1908-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Pseudomonas aeruginosa US-09-252-991A-10609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-252-991A-10245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-764-233A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-252-991A-10245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252.991A
CURRENT FILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 10245, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ligon, James M.
APPLICANT: Schupp, Thomas
APPLICANT: Beck, James J.
APPLICANT: Hill, Dwight S.
APPLICANT: Neff, Snezanna
                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Ciba-Geigy Corporation
STREET: 520 White Plains Road, P.O.
                                                                                                                                     MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                   APPLICANT: Ryals, John A.
TITLE OF INVENTION: Genes For The Biosynthesis Of Soraphen
PRIOR APPLICATION DATA:
                                                                                                                                                                                                            CITY: Tarrytown STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                               APPLICATION NUMBER: US/08/764,233A FILING DATE:
                                                                                                                                                                                         COUNTRY:
                CLASSIFICATION: 435
                                                                                                                                                                        ZIP: 10591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 CAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCTCGCTGACCTCCTTCGCTCGCTCGCCAGCCGGCGACGTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caerrereacererearesereresereseesereseeaere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCTCGCTGACCTCCTTCGCCTCGTCGCAGCCGGCGACGTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/08764233A
                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                     Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 25; DB 'Pred. No. 8.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 25; DB Pred. No. 8.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                    Version
                                                                                                                                                                                                                                                 Box 2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4; Length 2004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2691;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
TELEPHONE: (919) 541-8587
TELEFAX: (919) 541-8689
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: 19871..46318
OTHER INFORMATION: /note
OTHER INFORMATION: /note
FEATURE:
NAME/KEY: misc feature
LOCATION: 19870..24556
                                                                                                                                                                                                        FEATURE:

NAME/KEY: misc_feature

POCATION: 24638..30820
                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:

NAME/KEY: misc feature
LOCATION: 13455..19616

OTHER INFORMATION: /product= "Module 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 09-OCT-
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 49377 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
LOCATION: 383.760
OTHER INFORMATION: /proc
OTHER INFORMATION: /note
OTHER INFORMATION: the 1
OTHER INFORMATION: Sacci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Sorangium cellulosum IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
ORIGINAL SOURCE:
                                                                                                                       FEATURE: misc_feature
NAME/KEY: misc_feature
LOCATION: 30881..35446
OTHER INFORMATION: /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE: misc_feature
NAME/KEY: misc_feature
LOCATION: 7203..12884
OTHER INFORMATION: /pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION
                                                                                                           EATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Meigs, J. Timothy REGISTRATION NUMBER: 38, REFERENCE/DOCKET NUMBER:
NAME/KEY:
LOCATION:
                                                  NAME/KEY: misc feat
LOCATION: 35528..4
OTHER INFORMATION:
                                                                                                                                                                                                  OTHER INFORMATION: /product=
                                                                                                                                                                                                                                                                         OTHER INFORMATION: /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature LOCATION: 942.7115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature LOCATION: 927..19874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLONE: p98/1, pJL3, and pVKM15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                     misc_feature
35528..40114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
misc_feature
40190..46318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                                                                                                                               /product= "SorB"
/note= "Gene product is highly homologous to type I PKS
                                                    /product= "Module 4 of SorB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product = "SorA"
/note = "Gene product is highly homologous are known to be involved in the synthesis compounds."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            product= "SorR"
/note= "This gene encodes a protein that is highly homologo
the reductase domains of type I PKSs such as eryA from
Saccharopolyspora erythraea."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product= "Module 1 of SorA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US 08/258,261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US 08/729,214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38,241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1506/CIP6
                                                                                                                                                                                                                                                                         "Module 1 of SorB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Module 2
                                                                                                                           "Module
                                                                                                                                                                                                    "Module
                                                                                                                           w
                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                                                                                                                                                             of SorA'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of SorA"
                                                                                                                           of SorB'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  e ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  type I PKSs
polyketide
```

Ę

gen

```
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15674
                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                          US-09-252-991A-15674
                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                 RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-15702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ৪
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-252-991A-15702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-764-233A-1
                                                                                                                                                                                                                  GENERAL INFORMATION: APPLICANT: Marc J.
                                                                                                                                                                                                                                                        Sequence 15674, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US (
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15702
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 15702, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                     APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUSIONSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: unsure
LOCATION: (669)
OTHER INFORMATION: Identity of nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5048
                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 GTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                       ATGCAGGGCGCCGCCCCTGATCGCGCTCGTCGGCGCCGG 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCACCGCCCCCCCGCGCGCTCTCCACGCTCACGCTCACC 5090
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46851..47891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.8%;
72.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product= "SorM"

/note= "The protein encoded by the sorM gene is highly homologous to the methyltransferase from Streptomyces hygroscopicus that is involved in the synthesis of the polyketide rappamicin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product= "Module 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 60/094,190
                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 23.4;
Pred. No. 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 23.8;
Pred. No. 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           at the above locations are unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of SorB'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 49377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                         TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
; FEATURE:
; NAME/KEY: unsure
; LOCATION: (415)
; OTHER INFORMATION: I
US-09-252-991A-15656
APPLICANT: Sherman, D
APPLICANT: Mao, Y
APPLICANT: Mao, Y
APPLICANT: Marcylu, M
APPLICANT: He, M
APPLICANT: Sheldon, P
TITLE OF INVENTION: Mitomycin biosynthetic ger
TITLE OF INVENTION: MITOMER: US/09/266,965
CURRENT FILING DATE: 1999-03-12
EARLIER APPLICATION NUMBER: US 08/624,447
EARLIER APPLICATION NUMBER: PCT/US94/11279
EARLIER APPLICATION NUMBER: US 08/133,963
EARLIER FILING DATE: 1994-10-06
EARLIER FILING DATE: 1993-10-07
NUMBER: US 08/133,963
EARLIER FILING DATE: 1993-10-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; FEATURE:
; NAME/KEY: unsure
; LOCATION: (571)
; OTHER INFORMATION: Identity of nucleotide at the above locations
US-09-252-991A-15674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                           US-09-266-965-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-252-991A-15656/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15656
                                                                                                                                                                                                                                                                                                             Sequence 83, Applicate Patent No. 6495348 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No. 6551795
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 15656, Ap
Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                       933 ATGCAGGGCGCCGCCCTGATCGCGCTCGTCGGCGCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53 ATGCAGGGCGCCGCCGCCTGATCGCGCTCGTCGGCGCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGG 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
30; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGG
                                                                                                                                                                                                                                                                                                                                                        Application US/09266965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Identity of nucleotide at the above locations are unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 23.4;
Pred. No. 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 23.4;
Pred. No. 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                    gene cluster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   are unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
APPLICANT: Maco, Y
APPLICANT: Maco, Y
APPLICANT: Waroglu, M
APPLICANT: Waroglu, M
APPLICANT: Waroglu, M
APPLICANT: Waroglu, M
APPLICANT: Sheldon, P
TITLE OF INVENTION: Mitomycin biosynthetic gene cluster
FILE REFERENCE: 600.456US1
CURRENT APPLICATION NUMBER: US/09/266,965
CURRENT FILING DATE: 1999-03-12
EARLIER APPLICATION NUMBER: US 08/624,447
EARLIER FILING DATE: 1996-08-19
EARLIER FILING DATE: 1994-10-06
EARLIER APPLICATION NUMBER: PCT/US94/11279
EARLIER APPLICATION NUMBER: US 08/133,963
EARLIER FILING DATE: 1994-10-06
FARLIER FILING DATE: 1993-10-07
NUMBER OF SEQ ID NOS: 145
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                       US-09-252-991A-782/c

; Sequence 782, Application US/09252991A

; Patent No. 6551795

; Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: DNA
; ORGANISM: Streptomyces lavendulae
US-09-266-965-83
                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                 RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-266-965-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-266-965-75
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: FASTSEQ
SEQ ID NO 83
LENGTH: 2466
                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patent No. 6495348 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local
              APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ARRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: unsure
LOCATION: (302)...(302)
OTHER INFORMATION: n is a or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 18034
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Streptomyces lavendulae
                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 30; Conserv
                                                                                                                                                                                                                                                                                                                                                           11562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             φ
                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                         CGCTGCCGCCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 11602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCTGCCGCCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                               crereacererearecrerecreereceeeeeeee 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/09266965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.0%;
73.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 23.4; DE Pred. No. 35; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 23.4;
Pred. No. 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4; Length 2466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4; Length 18034;
                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
₽
                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-07-661-610C-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-252-991A-782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                          US-07-661-610C-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 782
LENGTH: 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 13,
                                                             Matches
                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                TELEFAX: (703)486-2347
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                           FILING DATE: 19910228
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5292643man F
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 2292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, VICURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/661,610C
                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compati
OPERATING SYSTEM: PC-DOS
                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Toyoda, Hideyoshi
APPLICANT: Utsumi, Ryutaro
APPLICANT: Obata, Kazuaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                 LENGTH: 1038 base pairs TYPE: nucleic acid STRANDEDNESS: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: Virginia
ZIP: 22202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1755 Jei
CITY: Arlington
                                                                                                                                                                                                                                                              TELEFAX:
                                                                                                                                                                                                                                                                              TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: OBLON, ADDRESSEE: P.C.
                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135 CTGTTCGCTCATGCTCTGATCGTTCTCGCACATGCCCGTCGTGC
 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 CAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGC
                             1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                             34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                        Similarity 65.4%;
Application US/07661610C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: P.C.
1755 Jefferson Davis Highway, Fourth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shibano,
                                                                                                                                                      unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                   IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                 (703)521-4500
                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fusaric Acid Resistant Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPIVAK, MCCLELLAND,
                                                          ; Score 23.2; D; Pred. No. 29; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                              2292-010-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 23.2;
Pred. No. 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MAIER & NEUSTADT
                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                      #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13; Indels
                                                                                        Length 1038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 201;
                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47
                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
 64
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Caps
                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

; Sequence 6, Application US/08443104
; Patent No. 5691162

GENERAL INFORMATION:

RESULT 12 US-08-443-104-6

```
RESULT 13
US-08-442-859-6
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-443-104-6
                                                                                                                                                                                                                                                                                                    Sequence 6, Application US/08442859 Patent No. 5807729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 65.4 Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 10174-6401

COMPUTER READABLE FORM:

MEDIUM TYPE: Tape

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION UMMBER: US/08/443,104
FILING DATE: 17-MAY-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/398,489

FILING DATE: 03-MAR-1995

ATTORNEY/AGENT INFORMATION:

NAME: Agris Dr., Cheryl H.

REGISTRATION NUMBER: 34,086

REFERENCE/DOCKET NUMBER: 4180.010-U
                                                                                                                                   APPLICANT: Madden, Mark
APPLICANT: Moyer, Donna L.
APPLICANT: Fuglasng, Claus
APPLICANT: Branner, Sven
TITLE OF INVENTION: MOVEL METALLOPROTEASE HAVING INCREASED
TITLE OF INVENTION: ACTIVITY
NUMBER OF SEQUENCES: 10
                                                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: 212-867-0123
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Fuglsang, Claus
APPLICANT: Branner, Sven
TITLE OF INVENTION: NOVEL METALLOPROTEASE HAVING INCREASED
TITLE OF INVENTION: ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: STRANDEDNESS: SI
                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 212-0-9655
                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ATGCAGTTCTCTCACGCTCTCATCGCTCGCTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New York
                                                                   New York
               10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                          ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
                                                                              405 Lexington Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: No. 56911620 No. 5691162disk of No. 5691162th America, 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1899 base pairs
                                 USA
                                                                                                                                                                                                                                                                 Shuster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Moyer, Donna L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shuster, Jeffrey R. Madden, Mark
                                                                                                 No. 58077290 No. 5807729disk of No. 5807729th America, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44.6%;
                                                                                                                                                                                                                                                                 Jeffrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 23.2; D
Pred. No. 32;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4180.010-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT 14
US-08-398-489-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Marches 34; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: CDNA US-08-442-859-6
                       COMPUTER READALLE FORM:

MEDIUM TYPE: Tape
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Versic
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/398,489
FILING DATE: 03-MAR-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Agris Dr., Cheryl H.
REGISTRATION NUMBER: 34,086
REFERENCE/DOCKET NUMBER: 4180.010-US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEPHONE: 212-867-0123
TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/398,489
FILING DATE: 03-MAR-1995
ATTORNEY/AGENT INFORMATION:

NAME: Agris Dr., Cheryl H.

REGISTRATION NUMBER: 34,086
REFERENCE/DOCKET NUMBER: 4180.010-U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Shuster, Jeffre APPLICANT: Madden, Mark APPLICANT: Moyer, Donna L. APPLICANT: Fuglsang, Claus APPLICANT: Branner, Sven
                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: No. 58437
                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: NOVEL METALLOPROTEASE HAVING INCREASED TITLE OF INVENTION: ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEFAX: 212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                        ZIP: 10174-6401
                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                            CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 1899 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE: 17-MAY CLASSIFICATION: 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE:
COMPUTER: II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , Application US/08398489 5843753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
                                                                                                                                                                                                                                                                                                                                                              New York
                                                                                                                                                                                                                                                                                                                                                                                                405 Lexington Avenue,
                 : 212-867-0123
212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fuglsang, Clau
Branner, Sven
                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44.6%;
ilarity 65.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                          58437530 No. 5843753disk of No. 5843753th America, Inc. xington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jeffrey R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/442,859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4180.010-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 23.2;
Pred. No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                        Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: cDNA US-08-398-489-6
    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                       PCT-US95-05534-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US95-05534-6
                                                            Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 65.4
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Application PC/TUS9505534 GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                               TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 10174-6401
COMPUTER READABLE FORM:
MEDIUM TYPE: Tape
COMPUTER: IBM PC compatible
                                                                                                                                      TOPOLOGY: 1.
                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/398,489
FILING DATE: 03-MARCH-1995
                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: U
FILING DATE: 04-MAY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: NOTITLE OF INVENTION: ACCUMANCE OF SEQUENCES: 1
                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC COMPACTOR OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                  STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                 TYPE: nucleic acid
                                                                                                                                                                                                                                                                                         NAME: Agris Dr., Cheryl H.
REGISTRATION NUMBER: 34,086
REFERENCE/DOCKET NUMBER: 4180.204-WO
                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: single
                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUDRESSEE:
                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nucleic acid
                           argcagricicacaccicicarcacreregregregeracecage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: Novo Nordisk of North America, 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1899 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                             212-878-9655
                                                              Conservative
                                                                                                                                                                                                                                                          212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                               04-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44.6%;
                                                                           44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOVEL METALLOPROTEASE HAVING INCREASED
                                                                                                                                                                                                                                                                                                                                                                                                                                               US 08/238/108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT/US95/05534
                                                                                                                                                                                                                               6:
                                                           Score 23.2; D
Pred. No. 32;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 23.2; DI
Pred. No. 32;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                              0
                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                         Length 1899;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1899;
                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                            52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                           Gaps
                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

밁 Ś

GENERAL

INFORMATION:

APPLICANT:

APPLICANT:

Jorgensen, Birthe R. Hastrup, Sven Branner, Sven

APPLICANT:

APPLICANT: APPLICANT:

Christensen, Tove
Jorgensen, Birgitte B.
Shuster, Jeffrey R.

Madden, Mark Moyer, Donna L. Fuglsang, Claus

```
RESULT 17
US-08-238-130-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 16
US-08-443-104-5
                                                                                                                                                                                                                           ; MOLECULE TYPE: US-08-443-104-5
Sequence 6, Applic Patent No. 5702934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence 5, Application US/08443104
Patent No. 5691162
                                                                                                                                                              Matches
                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                      TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Agris Dr., Cheryl H.
REGISTRATION UNBER: 34,086
REFERENCE/DOCKET NUMBER: 41
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/443,104
FILING DATE: 17-MAX-1995
CLASSIFICATION: 45
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/398,489
FILING DATE: 03=MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Tape
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: NOVEL METALLOPROTEASE HAVING INCREASED TITLE OF INVENTION: ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: USA
ZIP: 10174-6401
                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: New York
                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                            34;
                                                                                                                                                                                                                                                                      nucleic acid
EDNESS: single
                                                                                                                       ATGCGTTTCTCCGACTCTCCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shuster, Jeffrey
Madden, Mark
Moyer, Donna L.
Fuglsang, Claus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: No. 5691162o No. 5691162disk of No. 5691162th America, 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                      2052 base pairs
                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Branner, Sven
             lication US/08238130
                                                                                                                                                                                                                                                                                                                                                                        212-867-0123
                                                                                                                                                                          44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jeffrey R.
                                                                                                                                                                                                                                                                                                                                                                                                                 34,086
                                                                                                                                                                                                                                                                                                                                        5.
                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                        4180.010-US
                                                                                                                                                                           Score 23.2;
Pred. No. 32;
                                                                                                                                                           Mismatches
                                                                                                                                                                                            DB
                                                                                                                                                           18;
                                                                                                                                                                                           --
                                                                                                                                                                                         Length 2052;
                                                                                                                                                           Indels
                                                                                                                                                           0;
                                                                                              52
                                                                                                                                                           Gaps
                                                                                                                                                           0
```

```
문
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                        US-08-442-859-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-238-130-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                   Sequence 5, Application Patent No. 5807729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Shuste
APPLICANT: Madden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 212-867-012
TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                ADDRESSEE: No. 5807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 39
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 04-MAY-1999
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: DK 522/93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:

MEDIUM TYPE: Tape
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRE
COMPUTER READABLE FORM:
                                                                                                                                                  TITLE OF INVENTION: NOVEL METALLOPROTEASE HAVING INCREASED TITLE OF INVENTION: ACTIVITY
                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Agris Dr., Cheryl |
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/238,130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                  CITY: New York
STATE: New Yor
                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 405 Le
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: DK 5 FILING DATE: 05-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                     1 ATGCAGTTCTCACGCTCTCATCGCTCGCTCGCCGGCCTCGCCAGTG 52
                10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                     Application US/08442859
                                                                                                                                                                                                                                                                                                                                                                                       ATGCGTTTCTCCGACTCTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New York
                                                                                                                                                                                             Madden, Mark
Moyer, Donna L.
Fuglsang, Claus
                                                                              405 Lexington Avenue,
                                                                                                                                                                               Branner, Sven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: No. 57029340 No. 5702934disk of No. 5702934th America, Inc. 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2052 base pairs
                                   USA
                                                                                                                                                                                                                                                   Shuster, Jeffrey R
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mat_peptide
join(1..363, 416..802, 856..1821, 1870..2049)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 join(1..363, 416..802, 856..1821, 1870..2052)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                            58077290 No. 5807729disk of No. 5807729th America, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cheryl H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROCESSES FOR PRODUCING AN ENZYME
                                                                                                                                  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34,086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3965.200-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 23.2;
Pred. No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                  64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 2052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 19
US-08-398-489-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-442-859-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                              ZIP: 10174-6401

COMPUTER READABLE FORM:
MEDIUM TYPE: Tape
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, V
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/398,489
FILING DATE: 03-MAR-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: 212-867-01:
TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO:
                                             ATTORNEY/AGENT INFORMATION:
NAME: AGRIS Dr., Cheryl H.
REGISTRATION NUMBER: 34,086
REFERENCE/DOCKET NUMBER: 411
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Fuglsang, Claus
APPLICANT: Branner, Sven
TITLE OF INVENTION: NOVEL METALLOPROTEASE HAVING INCREASED
TITLE OF INVENTION: ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: 1
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 252
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0:
FILING DATE: 03=MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
FILING DATE: 17-MAY-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                ADUKESSEE: No. 58437530 No. 5843753disk of No. 5843753th America, Inc. STREET: 405 Lexington Avenue, 64th Floor CITY: New York
TELEPHONE: 212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 41
                                                                                                                                                                                                                                                                                                      COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Agris Dr., Cheryl H
REGISTRATION NUMBER: 34,08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 h 44.6%;
Similarity 65.4%;
34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08398489
                                                                                                                                                                                                                                                                                                                        New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGTTTCTCCGACTCTCCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2052 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Madden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shuster,
                                   212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PC compatible
EM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Donna L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jeffrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US 08/398,489
                                                                                                                                                                  US/08/398,489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/442,859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 23.2; D: Pred. No. 32; O; Mismatches
                                                                 4180.010-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4180.010-US
                                                                                                                                                                                                 Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

0

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
RESULT 21
US-09-207-844-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 20
US-08-894-772-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-398-489-5
                                                           밁
                                                                                      á
                                                                                                                                                                            ; MOLECULE TYPE: US-08-894-772-1
                                                                                                                                                                                                                       TELEFAX: 212-00. 1:
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 2052 base pairs
TYPE: nucleic acid
TYPE: nucleic single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 65.7
34; Conservative
                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1,
                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION: APPLICANT: Lehmbe
                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: L
FILING DATE: 27-AUG-1
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 2052 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                              NAME: Gregg, Valeta A. REGISTRATION NUMBER: 35. REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                    Local Similarity
                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New York
Y: U.S.A.
                                                                                    ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG
                                                          ATGCGTTTCTCCGACTCTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/08894772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: No. 5861280o No. 5861280disk of No. 5861280th America,
                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lehmbeck,
                                                                                                                                                                                                                                                                                                                  212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-AUG-1997
                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44.6%;
                                                                                                                                  44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Host Cell Expressing Reduced Levels
Of A Metalloprotease And Methods Using The Host Cell In Prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/894,772
                                                                                                                                                                                                                                                                                                                                                      35,127
                                                                                                                                                                                                                                                                                      1:
                                                                                                                    <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                4300.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 23.2;
Pred. No. 32;
                                                                                                                                  Score 23.2;
Pred. No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                    18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2052;
                                                                                                                                               Length 2052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                  0
                                                          52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                 0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                         RESULT 22
US-09-252-509-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-207-844-1
                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/09207844 Patent No. 5968774
                                                                                                                                                                                                                                                                                                      Sequence 1, Application US/09252509 Patent No. 6352841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                    SEQ ID NO 1
                                     TITLE OF INVENTION: No. 6352841el Host Cells and Methods
TITLE OF INVENTION: Producing Proteins
FILE REFERENCE: 4920.204-US
CURRENT APPLICATION NUMBER: US/09/252,509
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: 1024/96
PRIOR FILING DATE: 1996-09-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 212-867-0298
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/894
APPLICATION NUMBER: 08/894
FILING DATE: 27-AUG-1997
ATTORNEY/AGENT INFORMATION:
NAME: Gregg, Valeta A.
REGISTRATION NUMBER: 35.12
REFERENCE/DOCKET NUMBER: 4
                  LENGTH: 20
TYPE: DNA
                                                                                                                                                                                                                                                                    APPLICANT:
ORGANISM: Fusarium oxysporum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single TOPOLOGY: linear MOLECULE TYPE: DNA (gen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/207,844
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 2052 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 405 Lexi
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                ATGCGTTTCTCCGACTCTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
                                                                                                                                                                                                                                                                   Lehmbeck, Jan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: No. 59687740 No. 5968774disk of No. 5968774th America,
405 Lexington Avenue, Suite 6400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lehmbeck,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Host Cell Expressing Reduced Levels Of A Metalloprotease And Methods Using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08/894,772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35,127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 23.2;
Pred. No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4300.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The Host Cell In Prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

0

```
STRANDEDNESS:
TOPOLOGY: line
MOLECULE TYPE: C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 23
PCT-US95-05534-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5, Application GENERAL INFORMATION:
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 10174-6401

COMPUTER READABLE FORM:

MEDIUM TYPE: Tape
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION UMBER: PCT/US95/05534
FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Agris Dr., Cheryl H.
REGISTRATION NUMBER: 34,086
REFERENCE/DOCKET NUMBER: 4180
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEFAX: 212-878-9655
                                                                                                                                                        TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION UNMBER: US 08/238/108
FILING DATE: 04-MAX-1994
CLASSIFICATION:
CLASSIFICATION DATA:
PRIOR APPLICATION UNMBER: US 08/398,489
FILING DATE: 03-MARCH-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: NOTITLE OF INVENTION: ACCUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS
                                                                                                                       LENGTH: 2052 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGCAGTTCTCTACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application PC/TUS9505534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (1821)...(1868)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sig_peptide
(55)...(784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (785) ... (2049)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 nc ron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (802) ... (854)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (364) ... (415)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: Novo Nordisk of North America, Inc. 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                      linear
E: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .. (784)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44.6%;
   44.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOVEL METALLOPROTEASE HAVING INCREASED ACTIVITY
                                                                                                                                                                                                                                                 4180.204-WO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 23.2; DB 4;
Pred. No. 32;
0; Mismatches 18;
Score 23.2; DB 5; Pred. No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4; Length 2052;
                Length 2052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT 24
US-07-661-610C-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (703)486-2347
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 5437 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Appli
Patent No. 529264
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5292643man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 2292-01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)521-4500
TELEFAX: (703)486-2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                    FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                  LOCATION: FEATURE: NAME/KEY:
                                                                                                                                                                                                                                           LOCATION:
FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
ABBLICATION NIVERS: 10.707/651-6107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                    ORIGINAL SOURCE:
ORGANISM: Psei
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEF: OF SEQUENCE ADDRESS:
                                          FEATURE:
                                                                                                                             LOCATION: FEATURE:
FEATURE:
                                                                                                                                                                       EATURE
                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: V...
----- 22202
             NAME/KEY:
                                                                                                NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE: 199102 CLASSIFICATION: 435
                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 1755 Jefferson Davis Highway, Fourth Floor CITY: Arlington
                                                                                                                                                         NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGCAGTTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/07661610C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCGTTTCTCCGACTCTCCTCCTCATCGGCCTATCCAGCCTCGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Virginia
                                                                                                                                                                                                                                                                                                                                                                                                    5437 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Toyoda, Hideyoshi
Utsumi, Ryutaro
Obata, Kazuaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                              RBS
2301..2304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shibano,
                                                      CDS
2314..3354
                                                                                                                                                                                   RBS
1836..1839
                                                                                                                                                                                                                            CDS
531..1832
                                                                                                                                                                                                                                                                       RBS
519..
                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                           SgS
             3405..3409
                                                                                                                                          1847.
                                                                                                                                                                                                                                                                                                                Pseudomonas cepacia
                                                                                                                                                                                                                                                                                                                                             DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19910228
                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                          .2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/07/661,610C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2292-010-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caps
```

```
RESULT 26
5202236-12/c
5202236
; Patent No. 5202236
; PATENT MAUGH, KATHY J.; ANDERSON, DAVID M.; STRAUSBERG,
; APPLICANT: MAUGH, KATHY J.; ANDERSON, DAVID M.; STRAUSBERG,
; SUSAN L.; MCCANDLISS, RUSS; MEI, TENA; FILPULA, DAVID
; TITLE OF INVENTION: METHOD OF PRODUCING BIOADHESIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
US-07-661-610C-1
               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-647-492A-2
                                                                                                    5202236-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-647-492A-2
                                                                                                                                  SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: PFALLER, Rupert
TITLE OF INVENTION: EXPRESSION SYSTEM FOR PRODUCTION OF PROTEINS
FILE REFERENCE: PFALLER ET AL.-2 (PCT)
CURRENT APPLICATION NUMBER: US/09/647,492A
CURRENT FILING DATE: 2001-05-11
NUMBER OF SEQ ID NOS: 13
SOFTWARE: PatentIn version 3.0
SEQ ID NO 2
LENGTH: 5762
TYPE: DNA
ORGANISM: Trametes versicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/09647492A Patent No. 6551797 GENERAL INFORMATION:
                                        Query Match
Best Local Similarity
Matches 29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/528,762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                             FILING DATE: 25-MAY-1990
APPLICATION NUMBER: 82,456
FILING DATE: 07-AUG-1987
APPLICATION NUMBER: 933,945
FILING DATE: 24-NOV-1986
APPLICATION NUMBER: 650,128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION:
                                                                                                                                  FILING DATE: 13-SEP-1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY:
                                                                                                                    LENGTH: 3903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                548
11 CTCACGCTCTCATCGCTCTCGCTCGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 44.6%;
Similarity 65.4%;
34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTCGAGGTTTCACTCTTCTCGCCTTTCGTCGTTGCTTCCCTTGCGGCTG 599
                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4473..4979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sdo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
3414..4040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4457..4462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.6%;
                                                        44.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 23.2; DE Pred. No. 36; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 23.2; D
Pred. No. 36;
0; Mismatches
                                                          Score 23; DB
Pred. No. 40;
                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4; Length 5762;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 5437;
                                                                        6
                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                        Length 3903;
                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

```
APPLICAVI: ESSIOUX, LAUTENT APPLICAVI: ESSIOUX, LAUTENT APPLICAVII: ESSIOUX, LAUTENT ASSOCIATED GENES, PROTEINS AND BIALLELIC MARKERS FILE REFERENCE: GENSET.047AUS
CURRENT FILING DATE: US/09/539,333D
CURRENT FILING DATE: 2000-03-30
PRIOR APPLICATION NUMBER: US 60/126,903
PRIOR APPLICATION NUMBER: US 60/131,971
PRIOR APPLICATION NUMBER: US 60/131,971
PRIOR APPLICATION NUMBER: US 60/131,971
PRIOR APPLICATION NUMBER: US 60/132,065
PRIOR APPLICATION NUMBER: US 60/143,928
PRIOR FILING DATE: 1999-04-30
PRIOR FILING DATE: 1999-07-27
PRIOR APPLICATION NUMBER: US 60/143,928
PRIOR FILING DATE: 1999-07-29
PRIOR APPLICATION NUMBER: US 60/146,453
PRIOR APPLICATION NUMBER: US 60/146,453
PRIOR APPLICATION NUMBER: US 60/146,453
PRIOR APPLICATION NUMBER: US 60/146,452
PRIOR APPLICATION NUMBER: US 60/146,452
PRIOR FILING DATE: 1999-07-29
PRIOR FILING DATE: 1999-07-29
PRIOR APPLICATION NUMBER: US 60/146,452
PRIOR APPLICATION NUMBER: US 60/146,453
PRIOR FILING DATE: 1999-07-29
PRIOR APPLICATION NUMBER: US 60/146,452
PRIOR APPLICATION NUMBER: US 60/146,453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 27
US-09-539-333D-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence 1, Application US/09539333D Patent No. 6476208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS:
SOFTWARE: Patent.pm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 31
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: exon
LOCATION: 14877..14920
OTHER INFORMATION: exor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature LOCATION: 31..1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens FEATURE:
                                                                      NAME/KEY: exon
LOCATION: 29967..30282
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: exon
LOCATION: 18778..18862
OTHER INFORMATION: exor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION: 1108..1289
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: exon
                                                                                                                                                                                                                                                                                OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: 5'regulatory region g35018 gene
NAME/KEY: exon
LOCATION: 64666..64812
                                                                                                                                                                            LOCATION: 29388..29502
OTHER INFORMATION: exon
                                                                                                                                                                                                                          NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                   NAME/KEY: exon
                                                                                                                                                                                                                                                                                                           COCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1025 CGCCCGCTCCTTTCGCTTTCTTCCCTTCCGGGCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         319608
                                                                                                                                                                                                                                                                                                           25593..25740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bougueleret, Lydie
Bihain, Bernard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Blumenfeld,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chumakov, Ilya
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Daniel
                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                       exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Marta
                                                                                                                                                                                                                                                                                                                                                                                    Bbis
                                                                              m
                                                                           g35018 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g35018
                                                                                                                                                                               g35018
                                                                                                                                                                                                                                                                                g35018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g35018
                                                                                                                                                                                                                                                                                                                                                                                    g35018 gene
                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
```

```
NAME/KEY: exon
LOCATION: 231787..231880
OTHER INFORMATION: exon O2
                                                                                                                                       NAME/KEY: exon
LOCATION: 231272..231412
OTHER INFORMATION: exon Obis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: exon
LOCATION: 216661..216952
OTHER_INFORMATION: exon Qbis complement g34872 gene
NAME/KEY: exon
LOCATION: 231870..231879
OTHER INFORMATION: exon O1 complement g34872 gene
                                                                                                                                                                                                     NAME/KEY: exon
LOCATION: 230408..230721
OTHER INFORMATION: exon P
FEATURE:
                                                                                                                                                                                                                                                                               NAME/KEY: exon
LOCATION: 229647..229742
OTHER INFORMATION: exon X complement g34872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
LOCATION: 213818..215818
OTHER_INFORMATION: 3'regulatory region g34872 gene
                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: exon
LOCATION: 217027..217061
OTHER INFORMATION: exon Q1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: exon
LOCATION: 215819..215975
OTHER INFORMATION: exon !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: exon
LOCATION: 215819..215941
OTHER INFORMATION: exon R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: exon
LOCATION: 216836..216915
OTHER_INFORMATION: exon V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: exon
LOCATION: 214676..214793
OTHER INFORMATION: exon T g35030 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: exon
LOCATION: 201188..201234
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: 65505..65853
OTHER INFORMATION: exon G
                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: exon Q complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: exon
LOCATION: 216661..217061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: exon U g35030 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: exon
LOCATION: 215702..215746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: 94124..94964
OTHER INFORMATION: exon g35017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: 3'regulatory region g35018 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: 65854..67854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: exon FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         exon S g35030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rbis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F g35018 gene
                                                                                                                                                                                                                    complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g35030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g35018 gene
                                                                         complement
                                                                                                                                                                                                                                                                                                                                                                complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement
                                                                                                                                               complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                  g34872
                                                                                                                                                                                                                                                                                                                                                                                                                                     g34872
                                                                       g34872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g34872
                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                       gene
```

```
S
    밁
                                                             Query Match
Best Local Sim
Matches 32;
                                                                                                                       FEATURE:
NAME/KEY: exon
LOCATION: 292653..292841
                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: 290652..292652
OTHER INFORMATION: 3'regulatory
                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: exon
LOCATION: 240528..240994
OTHER INFORMATION: exon M692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: exon
LOCATION: 240528..240644
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
NAME/KEY: exon
LOCATION: 240528..240569
OTHER INFORMATION: exon /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: exon
LOCATION: 237406..237428
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME KEY: exon
LOCATION: 234174..234321
OTHER INFORMATION: exon O complement g34872
                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: 241686..243685
OTHER INFORMATION: 5'regulatory
                                                                                                                                                                                                                                                                                             NAME/KEY: exon
LOCATION: 240800..240993
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: exon
LOCATION: 240528...241685
OTHER INFORMATION: exon M1 complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: exon
LOCATION: 240528..240617
OTHER INFORMATION: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: exon
LOCATION: 240528..240596
OTHER INFORMATION: exon N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: exon
LOCATION: 239719..239853
OTHER INFORMATION: exon N complement g34872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: exon
LOCATION: 239719..239807
OTHER INFORMATION: exon N2 complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: 240528..240824
OTHER INFORMATION: exon
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: exon
184156 CAGTICACTAAGGCACTCAGCTCTGTCCTTGCTGATACCCAG 184110
                    4 CAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAG
                                                                              Similarity
                                                              Conservative
                                                                                                                                                                                                                                                                                              exon MS1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          exon M1069 complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      exon M1117
                                                                             44.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nbis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MS2 complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M1090 complement
                                                                                                                                                                                                                                                                                              complement g34872
                                                              <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                       complement g34872 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement g34872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement g34872 gene
                                                                             Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement g34872 gene
                                                                                                                                                                     region
                                                           Mismatches
                                                                                                                                                                                                                                 region
                                                                                                                                                                     g34665
                                                                                                                                                                                                                                 g34872
                                                                             DB
65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g34872 gene
                                                                                          4.
                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                             gene
                                                              15;
                                                                                          Length 319608;
                                                              Indels
                                50
                                                             0
                                                             Gaps
```

RESULT 28 US-09-679-409-1/c ; Sequence 1, Application US/09679409 ; Patent No. 6555316

```
APPLICANT: Bougueleret, Lydie
APPLICANT: Essioux, Laurent
ITITLE OF INVENTION: SCHIZOPHRENIA ASSOCIATED GENE, PROTEINS AND BIALLELIC MARKERS
FILE REFERENCE: 53.US15.CIP
CURRENT APPLICATION NUMBER: US/09/679,409
CURRENT FILING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 09/539,333
PRIOR RILING DATE: 2000-03-03
PRIOR FILING DATE: 2000-03-03
PRIOR FILING DATE: 1999-10-12
PRIOR FILING DATE: 1999-10-12
PRIOR FILING DATE: 1999-11-30
NUMBER: 09/50/168,088
PRIOR FILING DATE: 1999-11-30
NUMBER OF SEQ ID NOS: 134
SOFTWARE: Patent.pm
SEQ ID NO 1
LENGTH: 319608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Cohen, I
APPLICANT: Blumenf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: exon

NAME/KEY: exon

LOCATION: 201123..201560

OTHER INFORMATION: exon S2

NAME/KEY: exon

LOCATION: 214676..214793

OTHER INFORMATION: exon T

NAME/KEY: exon

LOCATION: 215702..215746

OTHER INFORMATION: exon U
NAME/KEY: exon
LCCATION: 246273...247802
OTHER INFORMATION: exon Z
NAME/KEY: misc feature
LCCATION: 247803...249803
OTHER INFORMATION: 3'regulatory region
NAME/KEY: allele
LCCATION: 8316
                                                                                                                                                                                                                                       NAME/KEY: exon
LOCATION: 240440...241153
OTHER INFORMATION: exon W2
NAME/KEY: exon
LOCATION: 241072...241291
OTHER INFORMATION: exon X
                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: exon
LOCATION: 216836..216994
OTHER INFORMATION: exon V
NAME/KEY: exon
LOCATION: 216836..217077
OTHER INFORMATION: exon V2
NAME/KEY: exon
LOCATION: 217671..217764
OTHER INFORMATION: exon V1
NAME/KEY: exon
LOCATION: 227655..227736
OTHER INFORMATION: exon V4
NAME/KEY: exon
LOCATION: 238715..238919
OTHER INFORMATION: exon V3
NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 319608
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: exon
LOCATION: 201123..201234
OTHER INFORMATION: exon S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
NAME/KEY: misc feature
LOCATION: 199122...201122
OTHER INFORMATION: 5'regulatory region
                                                                                                                                                                          NAME KEY: exon
LOCATION: 244353..244561
OTHER INFORMATION: exon Y
                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: exon
LOCATION: 240440..240673
OTHER INFORMATION: exon W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Blumenfeld, Mai
Chumakov, Ilya
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cohen, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Marta
```

•				, ., .	, ., .		, -, -						•											
LOCATION: 208285 OTHER INFORMATION:	20731 ORMATI	TION: 20654 R INFORMATI /KEY: allel	TION: 20606 R INFORMATI	TION: 20532 R INFORMATI	20520 ORMATI	ION: 20493 INFORMATI	20460 20460 ORMATI	TION: 20413 R INFORMATI	TION: 20337 R INFORMATI /KEY: allel	20267 ORMATI allel	ATION: 20265 ER INFORMATI E/KEY: allel	ORMATI allel	FORMATI : allel	8995 MATI 11e1	: 1733 FORMAT	ORMAT	ORMATI allel	ORMAT	1606 ORMAT	TION: 10728 R INFORMATI /KEY: allel	TION: 9539 R INFORMAT	TION: 65485 R INFORMATI /KEY: allel	TION: 21672 R INFORMATI	OTHER INFORMATION:
8-289-322 : polymorphic base A or G	8-251-322 : polymorphic base A or G	8-292-198 : polymorphic base A or G	8-293-130 : polymorphic base A or G	8-295-125 : polymorphic base C or T	8-295-248 : polymorphic base A or C	99-24644-194 : polymorphic base A or G	8-252-190 : polymorphic base C or T	8-296-213 : polymorphic base A or T	8-299-128 : polymorphic base A or T	8-300-193 : polymorphic base A or G	8-300-221 : polymorphic base A or G	8-303-235 : polymorphic base A or G	99-24658-410 : polymorphic base A or G	99-5919-215 : polymorphic base A or G	99-5862-167 : polymorphic base A or G	99-16100-147 : polymorphic base A or G	99-7652-162 : polymorphic base A or G	99-24634-108 : polymorphic base A or T	99-24639-163 : polymorphic base A or C	99-24656-260 : polymorphic base A or G	99-31960-363 : polymorphic base A or G	8-128-33 : polymorphic base C or T	99-27935-193 : polymorphic base G or C	99-27943-150 : polymorphic base G or C

```
RESULT 29
US-08-169-9488-35
                                                                                                                                                                                  В
                                                                                                                                                                                                         5
                                                                                              Sequence 35, Application US/08169948B Patent No. 5861271
                                       GENERAL INFORMATION:
APPLICANT: Fowler,
APPLICANT: Ward, Mi
APPLICANT: Clarkson
                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: 8-278-289 : polymorphic base
                                                                                                                                                                                                                                                                                                                    NAME/KEY: allele
LOCATION: 212821
                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: 8-279-197
                                                                                                                                                                                                                                                                                             NAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: 211132
OTHER INFORMATION: 8-282-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: 211050
OTHER INFORMATION: 8-282-174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: 210463
OTHER INFORMATION: 8-283-176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: 209123
OTHER INFORMATION: 8-287-86
                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: 8-281-248
                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: 8-281-299
                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: allele
LOCATION: 211315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: 8-281-367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: 210964

OTHER INFORMATION: 8-282-260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATION: 210879
OTHER INFORMATION: 8-282-345
NAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: 210361
OTHER INFORMATION: 8-283-278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: 8-285-319
NAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VAME/KEY: allele
LOCATION: 211247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: allele
LOCATION: 210583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: 8-283-153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: allele
LOCATION: 210486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: 8-287-249
                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: 8-283-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             νΑΜΕ/ΚΕΥ: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: allele
    TITLE OF INVENTION:
                                                                                                                                                                                  184156
                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                      32;
                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                               CAGTTCACTAAGGCACTCAGCTCTGTCCTTGCTGTGGTCATACCCAG 184110
                                                                                                                                                                                                 CAGITCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20963
                                     Ward, Michael
Clarkson, Kathleen
             Larenas,
                                                                     Fowler,
                          Collier, Katherine
                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8-282-245
                                                                  Timothy
                                                                                                                                                                                                                                                44.2%;
No. 5861271el Cellulase Enzymes
              Edmund
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ••
                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                 Score 23;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                 ..
                                                                                                                                                                                                                                                                                                                                                                                         ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : variable motif AAAGG or GAAGGAAGGAAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : polymorphic base C
                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : polymorphic base G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polymorphic base A or T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polymorphic base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polymorphic base
                                                                                                                                                                                                                                                                                                                                                 polymorphic base
                                                                                                                                                                                                                                                                                                                                                                                         polymorphic base
                                                                                                                                                                                                                                                                                                                                                                                                                                polymorphic base A or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polymorphic base A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polymorphic base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polymorphic base G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polymorphic base A or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polymorphic base G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polymorphic base
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polymorphic base G
                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                DB
65;
                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A or
                                                                                                                                                                                                                                                              Length 319608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C or
                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                               Þ
                                                                                                                                                                                                                                                                                                                                                                                        ດ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ×
                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                         or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or
                                                                                                                                                                                                                                    Indels
and
Systems
                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                 0
```

```
RESULT 30
US-08-448-873-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-169-948B-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 35,
Patent No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (415)742-721
INFORMATION FOR SEQ ID NO:
                                                                                                                    ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy (
COMPUTER: IBM PC com
                                                                                                                                                                                                                                                                                                                 APPLICANT: Fowler, Timothy
APPLICANT: Ward, Michael
APPLICANT: Clarkson, Kathleen
APPLICANT: Collier, Kathlerine A.
APPLICANT: Larenas, Edmund
TITLE OF INVENTION: No. 5874276el Cellulase
TITLE OF INVENTION: For Their Expressions
                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/169,948B FILING DATE: DEC 17 1993 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Genencor International
STREET: 180 Kimball Way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear MOLECULE TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Horn, Margaret A. 401
REGISTRATION NUMBER: 33,401
REFERENCE/DOCKET NUMBER: GCT
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 48
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genencor International
STREET: 180 Kimball Way
PRIOR APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                FILING DATE:
CLASSIFICATION:
                                                  APPLICATION NUMBER:
                                                                                                                                                                                                               CITY: South San Francisco
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 48 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 180 KimDail Tay
CITY: South San Francisco
                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGTTCTCTCACGCTCTCATCGCTCTCTCGTCGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/08448873
                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (415)742-7217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (415) 742-7536
                                                                                                                                      Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43.1%; Score 22.4; E
66.7%; Pred. No. 38;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        For Their Expression
                                              US/08/448,873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GC226
                                                                                    Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                     Enzymes and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                     Systems
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Caps
```

```
; TOPOLOGY: 1; MOLECULE TYPE: US-08-382-452D-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-448-873-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 32; Conserv
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -08-382-452D-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (415)742-721
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Stone, Christopher L.
REGISTRATION NUMBER: 35,696
REFERENCE/DOCKET NUMBER: GC22
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 742-7555
TELEPHONE: (415) 742-7217
                                                                                                                                                                                NAME: Christopher L. Stone
REGISTRATION NUMBER: 36,696
REFERENCE/DOCKET NUMBER: GC226-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 742-7555
TELEPHONE: (415) 742-7217
INFORMATION FOR SEQ ID NO: 35:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 48 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: li
                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 48 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Collier, Katherine D.
APPLICANT: Larenas, Edmund A.
TITLE OF INVENTION: NOVEL CELLULOSE ENZYMES AND SYSTEMS
TITLE OF INVENTION: FOR THEIR EXPRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Fowler, Timothy
APPLICANT: Clarkson, Kathleen A.
APPLICANT: Ward, Michael
                                                                                                                                                                                                                                                                                            FILING DATE: February 1, 1995
ATTORNEY/AGENT INFORMATION:
NAME: Christopher L. Stone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS: single
                                                                                                          TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/382,452D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A)DRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/08382452D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: Genencor International 925 Page Mill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA (genomic)
                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43.1%;
43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08/169,948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GC226D14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 22.4;
Pred. No. 38;
Score 22.4;
Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                       Version #1.25
                 DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
               Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
밁
                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 32
US-08-507-362A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                US-09-146-770-2
                                                                                                                                                                     RESULT 33
                                                                                                                                                                                                                                                                                                                                                                             US-08-507-362A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
             Sequence 2, Application US/09146770

Patent No. 6187732

GENERAL INFORMATION:
APPLICANT: Fowler, Timothy
TITLE OF INVENTION: Mutant EGIII Cellulase, DNA Encoding
TITLE OF INVENTION: Such EGIII Compositions and Methods for Obtaining Same
FILE REFERENCE: GC546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. 6562340
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 19, Application US/08507362A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                     Best Local
CURRENT APPLICATION NUMBER: US/09/146,770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 19: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: USA
ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
SEQUENCE DESCRIPTION: SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 33,228
REFERENCE/DOCKET NUMBER: GC226-3
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/507,362A FILING DATE: 27-Oct-1995 CLASSIFICATION: <Unknown> ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Genencor International
STREET: 925 Page Mill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Larenas, Edmund
TITLE OF INVENTION: An Enzyme Feed Additive and Animal Feed Including It
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Bedford, Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32;
                                                                                                                                                                                                                                                            1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCCTGGCC
                                                                                                                                                                                                                         ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 49 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: (650) 846-4072
TELEFAX: (650)845-6504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Castaneda, Janet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Collier, Katherine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clarkson, Kathleen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Morgan, Andrew
Fowler, Timothy
                                                                                                                                                                                                                                                                                                                   43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Michael
                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO: 19:
                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                     Score 22.4;
Pred. No. 38;
                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16;
                                                                                                                                                                                                                                                                                                                                     Length 49;
                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48
                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
RESULT 35
US-09-633-084-2
; Sequence 2, Application US/09633084
; Patent No. 6407046
; GENERAL INFORMATION:
; APPLICANT: FOWNEY, Timothy
; APPLICANT: FOWNEY, MITTARE EGIII C
                    Ś
                                                                                                                  ; LENGTH: 702
; TYPE: DNA
; ORGANISM: T. longibrachiatum
US-09-633-084-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-216-295-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-146-770-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 2
LENGTH: 702
TYPE: DNA
ORGANISM: Trichoderma longibrachiatum
                                                                 Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application Patent No. 6268328
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT FILING DATE: 1998-09-03
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version
SEQ ID NO 2
LENGTH: 702
                                                                                                                                                                                SEQ ID NO 2
                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/633,084
CURRENT FILING DATE: 2000-08-04
PRIOR APPLICATION NUMBER: 09/146,770
PRIOR FILING DATE: 1998-09-03
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/216,295
CURRENT FILING DATE: 1998-12-18
NUMBER OF SEQ ID NOS: 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Mitchinson, CAPPLICANT: Wendt, Dan J.
TITLE OF INVENTION: NO.
FILE REFERENCE: GC555
                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Mutant EGIII Cellulase, DNA Encoding TITLE OF INVENTION: Such EGIII Compositions and Methods
                                                                                                                                                                                                                                                                                               FILE REFERENCE: GC546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 702
TYPE: DNA
ORGANISM: T. longibrachiatum
1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCC
                                               1 Similarity
32; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ATGCAGTTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09216295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             No. 6268328el Variant EGIII-Like Cellulase Compositions
                                                               43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Colin
                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                 Score 22.4;
Pred. No. 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 22.4;
Pred. No. 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 22.4;
Pred. No. 51;
                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
••
                                                                             Length 702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                       for Obtaining Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48
                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>.</u>
                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
RESULT 38
US-08-032-848C-11
                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                 ; SEQ ID NO 2
; LENCTH: 702
; TYPE: DNA
; ORGANISM: T. longibrachiatum
US-10-261-997-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; SEQ ID NO 2
, LENGTH: 702
; TYPE: DNA
; ORGANISM: T. longibrachiatum
US-10-075-872-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 37
US-10-261-997-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-075-872-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Fowler, Timothy
TITLE OF INVENTION: Mutant EGIII Cellulase, DNA Encoding
TITLE OF INVENTION: Such EGIII Compositions and Methods
FILE REFERENCE: GC546
                                                                                                                                                  Patent No. 5475101
GENERAL INFORMATION:
                                                                                                                                                                          Sequence 11, Application US/08032848C Patent No. 5475101
                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION: APPLICANT: Fowler,
            APPLICANT: Ward, Michael
APPLICANT: Clarkson, Kathleen A.
APPLICANT: Weiss, Geoffrey L.
APPLICANT: Larenas, Edward
APPLICANT: Lorch, Jeffrey D.
TITLE OF INVENTION: Purification and Mc
TITLE OF INVENTION: EG III Cellulase
NUMBER OF SEQUENCES: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/10261997 Patent No. 6582750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/10075872
Patent No. 6500211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/261,997
CURRENT FILING DATE: 2002-09-30
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Mutant EGIII Cellulase, D
TITLE OF INVENTION: Such EGIII Compositions
FILE REFERENCE: GC546
CURRENT APPLICATION NUMBER: US/10/075,872
CURRENT FILING DATE: 2002-02-13
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 3.0
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                         1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                         ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC
                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43.18;
                                                                                                                                                                                                                                                                                                                                                             43.1%;
                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 22.4; D
Pred. No. 51;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                             Score 22.4;
Pred. No. 51;
                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                  Molecular Cloning
                                                                                                                                                                                                                                                                                                                                                                               BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and Methods
                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for Obtaining Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for Obtaining
                                                                                                                                                                                                                                                                         48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48
                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Same
                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

ADDRESSEE: Genencor International STREET: 180 Kimball Way CITY: South San Francisco

Ç

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-438-870-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-032-848C-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 1050 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
APPLICATION NUMBER: US/08/438
FILING DATE: May 10, 1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Christopher L. Stone
REGISTRATION NUMBER: 35,696
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415 742-7555
                                                                                                           ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
CURRENT APPLICATION UMBER: US/08/438,870
                                                                                                                                                                                                                                                                                                                                     APPLICANT: Ward, Michael
APPLICANT: Weiss, Geoffrey L.
APPLICANT: Larenas, Edward
APPLICANT: Lorch, Jeffrey D.
TITLE OF INVENTION: Purification and Molecular Cloning of EG
TITLE OF INVENTION: III Cellulase
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSE: Genencor International
STREET: 180 Kimball Way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Horn, Margaret A.
REGISTRATION NUMBER: 33,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: 415 742-7356
                                                                                                                                                                                                                                                                                                              STREET: 180 Kimball Way
CITY: South San Francisco
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: MAR 17 1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            h 43.1%;
Similarity 66.7%;
32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/08438870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/032,848C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 22.4;
Pred. No. 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              red. No. 54;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1; Length 1050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 40
US-08-774-065-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear ; MOLECULE TYPE: DNA (genomic) US-08-438-870-11
                                                                                                                                       US-08-774-065-1
                                                                                    Best
                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No.
                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 415 742-7217
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                     TELEFAX: 415-845-6504
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                              FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Glaister, Debra J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: OSS
                                                                                                                                                                                                                                                                                       NAME: Glaister, Debra J.
REGISTRATION NUMBER: 33,888
REFERENCE/DOCKET NUMBER: GC:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: NOVEL OVERSIZED CELLULASE COMPOSITIONS TITLE OF INVENTION: FOR USE IN DETERGENT COMPOSITIONS AND TITLE OF INVENTION: IN THE TREATMENT OF TEXTILES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: GENENCOR INTERNATIONAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                    TYPE: nucleic acid STRANDEDNESS: sing TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 925 PAGE MILL ROAD CITY: PALO ALTO STATE: CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: nucleic acid
STRANDEDNESS: single
                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151 ATGAAGTTCCTTCAAGTCCTCCCTCCCTCATACCGGCCGCCCTGGCC 198
151 ATGAAGTTCCTTCAAGTCCTCCCTGCCCTCATACCGGCCGCCCTGGCC 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 43.1%; Score 22.4; E Similarity 66.7%; Pred. No. 54; 32; Conservative 0; Mismatches
                                1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08774065
                                                                                                                                                                                                      1050 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1050 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ward, Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UNITED STATES
                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clarkson, Kathle
Larenas, Edmund
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bower, Benjamin
                                                                                                                                                                                                                                                                             415-846-7620
                                                                                                                                                                  single
                                                                                   43.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kathleen
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/774,065
                                                                                 Score 22.4;
Pred. No. 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                   DB 2;
                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1050;
                                                                                                   Length 1050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                  1ndels
                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                  0
```

Page 17

Job time: 65 secs

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                               Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using
                                                                                                                                                         000000
                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                            Score
       seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         November 13, 2003, 08:18:16; Search time 216 Seconds (without alignments) 786.790 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2169961 seqs, 1634102185 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 atgcagttctctcacgctct.....cgctgccggcctcgccagtg 52
       Published_Applications_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                        / cgn2_6/ptodata/2/pubpna/PCT NEW PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/PCT NEW PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO6_NEW PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO6_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO9_NEW PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO9 NEW PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO9A_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/USO9B_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd
     336
1196
1196
1196
1196
3177
329
329
312
912
913
914
609
1195
1195
3309400
590
590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
6 14 US-10-270-333-149
2 14 US-10-270-333-148
5 12 US-10-029-386-7131
2 14 US-10-156-761-6808
4 14 US-10-156-761-7129
8 14 US-10-156-761-129
10 US-09-738-626-3337
10 US-09-738-626-337
11 US-10-156-761-2054
10 US-09-738-626-1
2 US-10-027-632-50396
2 US-10-027-632-50398
12 US-10-027-632-50398
13 US-10-027-632-50398
                                                                                                                                                                                                                                                                                            BB
                                                                                                                                                                                                       US-09-825-414-37
US-09-815-242-7958
US-09-804-551B-43
US-10-270-333-149
                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sw model
                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                     Sequence 37, Ap
Sequence 7958,
Sequence 43, Ap
Sequence 43, Appl
Sequence 149, App
Sequence 148, App
Sequence 7131, Ap
Sequence 7131, Ap
Sequence 7129, Appli
Sequence 1, Appli
Sequence 2054, Ap
Sequence 1, Appli
Sequence 50396, A
Sequence 50397, A
Sequence 50398, A
                                                                                                                                                                                                                                                                                        Description
```

C	ი	ი	ი					ი			ი	ი							ი					ი	ი	ი		
45	44	43	42	41	40	9	38	37	36	35	34	ω ω	32	ω H	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	۲		22.8	<i>ب</i>	۲		23	23	23.2	•	•	23.2	•	23.4	23.4		23.4	•		•	٠	•	•	23.6	•	•	23.6	23.6
	٠	Ψ	43.8	ü	ω.		4.		44.6			0							۵.	٠.	٠.	<u>.</u>	۵.	٠.	4.	<u>.</u>	45.4	4.
4621	3608	2621	2559	381	379	322	939	492	597	497	450	271	9025608	18034	18034	2466	2466	1029	135638	1136	590	590	590	590	590	590	590	590
14		4	4	10	0	10			12	12	9	10	14				12					13					12	
US-10-128-714-5006	US-10-128-714-6	US-10-128-714-6006	US-10-128-714-7006	US-09-960-352-12293	109	US-09-960-352-476	US-10-156-761-4691	US-09-918-995-37972	19	US-10-029-386-21891	US-09-867-550-223	US-09-878-574-12667	US-10-156-761-1	US-10-267-255-75	US-09-953-348-75	US-10-267-255-83	US-09-953-348-83	US-10-156-761-5574	10-314-657-	10-198-846-	10-027-632-	10-027-63:	10-027-63	-0	10-027-63	-63	-10-027-63:	US-10-027-632-82973
50		60	Ø	Q	e 11092,	476, A		37972,	8191, A	2189	223	1266	e 1,	Sequence 75, Appl	75,		83,	55	1, Appl	1257	82974,	82973,	82972,	50398,	50397,	50396,	8297	Sequence 82973, A

ALIGNMENTS

```
GENERAL INFORMATION:
APPLICANT: COllmer, Alan
APPLICANT: CAllmer, Alan
APPLICANT: Alfano, James R.
APPLICANT: Alfano, James R.
APPLICANT: Alfano, James R.
APPLICANT: Charkowski, Amy O.
IIILE OF INVENTION: DAM MOLECULES AND POLYPEPTIDES OF PSEUDOMONAS SYRI
IIILE OF INVENTION: HRP PATHOGENICITY ISLAND AND THEIR USES
FILE REFERENCE: 19603/3243
CURRENT FILING DATE: 2000-04-03
PRIOR APPLICATION NUMBER: 60/194,160
PRIOR FILING DATE: 2000-08-01
PRIOR FILING DATE: 2000-08-01
PRIOR APPLICATION NUMBER: 60/224,604
PRIOR FILING DATE: 2000-08-01
PRIOR APPLICATION NUMBER: 60/249,548
PRIOR FILING DATE: 2000-011-17
NUMBER OF SEQ ID NOS: 91
SEQ ID NO 37
LENGTH: 336
TYPE: DNA
ORGANISM: Pseudomonas syringae
US-09-825-414-37
RESULT 2
US-09-815-242-7958/c
· Sequence 7958, Application US/09815242
                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 1
US-09-825-414-37
                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No. US20020083489A1 GENERAL INFORMATION:
                                                                                                                                        154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37,
                                                                                                                                                               CAGTTCTCTCACGCTCTCATCGCTCTCTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                    CTGTTGGCTGGCGCTCTCAACCCCCTTGTGAATGCCGGCCCCGGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09825414
                                                                                                                                                                                                                48.1%; ilarity 69.4%; Conservative (
                                                                                                                                                                                                                Score 25; DB 9;
Pred. No. 12;
0; Mismatches 1
                                                                                                                                                                                                                  15;
                                                                                                                                 202
                                                                                                                                                                            52
                                                                                                                                                                                                                  0
                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYRINGAE
                                                                                                                                                                                                                  0
```

APPLICANT:

APPLICANT: Haselbeck, Robert

Ohlsen, Kari L. Zyskind, Judith W Wall, Daniel INFORMATION:

US20020061569A1

```
US-09-804-5518-43/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/815,242
CURRENT FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR FILING DATE: 2000-10-23
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR FILING DATE: 2000-11-27
                                                   US-09-804-551B-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 43, Application US/09804551B
Patent No. US20020056151A1
GENERAL INFORMATION:
                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 92
SOFTWARE: PatentIn Ver. SEQ ID NO 43
  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 7958
                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/804,551B
CURRENT FILING DATE: 2001-03-12
PRIOR APPLICATION NUMBER: DE 100 13 618.4
PRIOR FILING DATE: 2000-03-18
                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Bayer Aktiengesellschaft
TITLE OF INVENTION: Receptors for peptides from insects
FILE REFERENCE: Le A 34 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 14110
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Identification of Essential Genes in TITLE OF INVENTION: Prokaryotes FILE REFERENCE: ELITRA.011A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: 60/269,308 PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                            NAME/KEY: CDS
LOCATION: (1)
                                                                                                                                            TYPE: DNA ORGANISM: Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
LOCATION: (1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Pseudomonas aeruginosa
                                                                                                                          FEATURE:
                                                                                                                                                                                            LENGTH: 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/257,931
FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    507 CAGCTCGCTGACCTCCTTGGCCTCGTCGCAGCCGGCGACGTCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 CAGITCICICACGCICTCATCGCICGCTCGCCGGCCTCGCCAGIG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yamamoto, Robert T.
Xu, H. Howard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Trawick, John D.
                                                                          .. (1563)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ...(1920)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48.1%;
  47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 25; DB 9; Length 1920; Pred. No. 12; 0; Mismatches 15; Indels
     Score 24
     6.
     В
  9
Length 1566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
CURRENT APPLICATION NUMBER: US/10/270,333
CURRENT FILING DATE: 2002-10-15
PRIOR APPLICATION NUMBER: 60/168,677
PRIOR FILING DATE: 1999-12-03
PRIOR APPLICATION NUMBER: 60/175,691
PRIOR PILING DATE: 2000-01-12
PRIOR APPLICATION NUMBER: 60/191,638
PRIOR FILING DATE: 2000-03-23
NUMBER OF SEQ ID NOS: 198
SOFTWARE: FASUSEQ for Windows Version 4.0
SEQ ID NO 148
LENGTH: 3772
TYPE: DNA
OFFORMATION NUMBER: 60/191,638
LENGTH: 3772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; LENGTH: 1566
; TYPE: DNA
; ORGANISM: Drosophila
US-10-270-333-149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                      ; ORGANISM: Drosophila
US-10-270-333-148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-270-333-148/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-270-333-149/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/270,333
CURRENT FILING DATE: 2002-10-15
PRIOR APPLICATION NUMBER: 60/168,677
PRIOR FILING DATE: 1999-12-03
PRIOR APPLICATION NUMBER: 60/175,691
PRIOR APPLICATION NUMBER: 60/175,691
PRIOR FILING DATE: 2000-01-12
PRIOR APPLICATION NUMBER: 60/191,638
PRIOR FILING DATE: 2000-03-23
NUMBER OF SEQ ID NOS: 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Publication No. US20 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Publication No. US20 GENERAL INFORMATION:
Best Local Similarity Matches 33; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 148,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Cravchik, Anibal
TITLE OF INVENTION: INCLEDIC ACID MOLECULES ENCODING GPCR PROTEINS, AND USES
TITLE OF INVENTION: THEREOF AS INSECTICIDAL TARGETS
FILE REFERENCE: CL000733CON
                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: CL000733CON
                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: ISOLATED G-PROTEIN COUPLED RECEPTORS,
TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING GPCR PROTEINS, AND USES
TITLE OF INVENTION: THEREOF AS INSECTICIDAL TARGETS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Cravchik, Anibal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 646 GCACAGCGGTCACGACCTCCTCGCTCCTCGCTGGAGTCCTCCACA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      646 GCACAGCGGTCACGACCTCCTCGCTCTCCTCGCTGGAGTCCTCCACA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 GCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/10270333
o. US20030092124A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/10270333
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US20030092124A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70.2%;
  ; Score 24.6; D; Pred. No. 16; O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 24.6;
Pred. No. 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 16;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 14;
                                          DB 14;
  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1566;
                                       Length 3772;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
  Indels
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 6808
LENGTH: 912
TYPE: DNA
ORGANISM: Streptomyces avermitilis
FEATURE:
NAME/KEY: CDS
LOCATION: (1)..(912)
US-10-156-761-6808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
US-10-156-761-6808/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-029-386-7131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 6
US-10-029-386-7131/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
SEQ ID NO 7131
LENGTH: 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 7131, Application US/10029386 Publication No. US20030194704A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 6808, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Publication No. US20
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K.
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR TITLE OF INVENTION: EXPRESSION ANALYSIS TWO FILE REFERENCE: AEOMICA-X-2 CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT FILING DATE: 2001-12-20
NUMBER OF SEQ ID NOS: 34288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: MAP TO AL021938.1

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 2.1

OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL = 2

OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1.9

OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 2.1

OTHER INFORMATION: SWISSPROT HIT: 092033, EVALUE 1.00e-53

OTHER INFORMATION: EXT HUMAN HIT: BF311359.1, EVALUE 0.00e+00

OTHER INFORMATION: NT HIT: 9i16162622, EVALUE 0.00e+00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1701 GCACAGCGGTCACGACCTCCTCGCTCGCTGGAGTCCTCCACA 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138 TGCAGTTCCCTCACAGTCTTCACGTTCTCTTCCCTTGCGAAAGCTCCAGT 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGT 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SHIBA, TADAYOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46.9%;
68.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 24.4; DB 12; Pred. No. 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                          SEQ ID NO :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
```

```
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 7129
LENGTH: 954
                                                   APPLICANT: SHIBA, TADAYOSHI
APPLICANT: HATTORI, MASHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 9
US-10-156-761-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-156-761-7129
                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 7129, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: OMURA, SATOSHI APPLICANT: IKEDA, HARUO
                                     NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: CDS
LOCATION: (1)..(954)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Streptomyces avermitilis FEATURE:
LENGTH: 9025608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             853 ATGCGCTACGCCAACGCGGCGCCGGCGCCTCGTCGCCTCGCCTCGCCTCGCCTG 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           523 GCAGGTGGCGCACGGCCTCGACGACGTTGCCGGTGCCGGCCTCGCCCTTG 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 GCAGTTCTCTCACGCTCTCATCGCTCTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                         ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                         US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46.9%;
68.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 24.4;
Pred. No. 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 24.4;
Pred. No. 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 912;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 954;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
; LOCATION: (4187715)
; OTHER INFORMATION: a, t, c,
US-10-156-761-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
                                                                                                                                                                                                                                                                 RESULT 11
US-10-156-761-2054
                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                      ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: DNA
; ORGANISM: Corynebacterium glutamicum
US-09-738-626-3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-738-626-3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: SENOH, AKHIRO
APPLICANT: IKEDN, MASATO
APPLICANT: IKEDN, MASATO
APPLICANT: OZAKI, MASATO
APPLICANT: OZAKI, MASATO
INTILE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-125
CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16
PRIOR FILING DATE: 1999-12-16
PRIOR APPLICATION NUMBER: JP 00/159162
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-08-03
PRIOR FILING DATE: 2000-08-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 7059
SOFTWARE: PatentIn ver. 3.0
SEQ ID NO 337
LENGTH: 609
Type: 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: NAKAGAWA, SATOSHI
APPLICANT: MIZOGUCHI, HIROSHI
APPLICANT: MNZOGUCHI, HIROSHI
APPLICANT: HAYASHI, MIKIRO
APPLICANT: OCHIAI, KEIXO
APPLICANT: YOKOI, HARUHIKO
APPLICANT: TATEISHI, NAOKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3337, Application US/09738626 Publication No. US20020197605A1 GENERAL INFORMATION:
                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                         Sequence 2054, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature LOCATION: (4187715)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Streptomyces avermitilis FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8154610 GCAGGTGGCGCACGGCCTCGACGACGTTGCCGGTGCCGGCCTTCGCCCTTG 8154561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                     2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 GCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                              TTCAGATCGGATACGCCATCATCGGTATCCGCGCAGCAGGTCTCGCCGCTG 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MIZOGUCHI, HIROSHI
ANDO, SEIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46.9%;
llarity 68.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g, other or unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 24.4; D. Pred. No. 14; O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 23.8; DI
Pred. No. 32;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                              17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 9025608;
                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 2054
ENCTH: 1455
                                                                                               RESULT 13
US-10-027-632-50396/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                            망
                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                   US-09-738-626-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-738-626-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-156-761-2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-125
CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16
PRIOR FILING DATE: 1999-12-16
PRIOR APPLICATION NUMBER: JP 00/159162
PRIOR FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEC 150 150 NOS 2000-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: NAKAGAWA, SATOSHI
APPLICANT: MIZOGUCHI, HIROSHI
APPLICANT: ANDO, SEIKO
APPLICANT: HAYASHI, MIKIRO
APPLICANT: OCCHIAI, KEIKO
APPLICANT: YCKOI, HARUHIKO
APPLICANT: TATEISHI, NAOKO
Sequence 50396, Application US/10027632
Publication No. US20030204075A9
GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and
                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn ver. 3.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/09738626
Publication No. US20020197605A1
                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: Streptomyces avermitilis FEATURE:
                                                                                                                                                                                                                                                                                                                                               LENGTH: 3309400
TYPE: DNA
ORGANISM: Corynebacterium glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
LOCATION: (1)..(1455)
                                                                                                                                                                        3218393 TTCAGATCGGATACGCCATCATCGGTATCCGCGCAGCAGGTCTCGCCGCTG 3218443
                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1282 ATGCCGTTCACGTACTCCATCACCGCCGGCGTGGCGGCCGGGGTCCTCAGT 1332
                                                                                                                                                                                                                                                      34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34;
                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGT
                                                                                                                                                                                                 TGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OCHIAI, KEIKO
YOKOI, HARUHIKO
TATEISHI, NAOKO
SENOH, AKIHIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OZAKI, AKIO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IKEDA, MASATO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.8%;
66.7%;
                                                                                                                                                                                                                                                                      45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 23.8; DE Pred. No. 31; 0; Mismatches
                                                                                                                                                                                                                                                      .,
                                                                                                                                                                                                                                                                      Score 23.8;
Pred. No. 24;
                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                            DB 10;
                                                                                                                                                                                                                                                      17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14;
                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1455;
                                                                                                                                                                                                                                                                                        Length 3309400;
                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

and Mapping of Single Nucleotide

```
S
                                                                                                                                  ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-50397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-50396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-027-632-50397/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 50397, Application US/10027632 Publication No. US20030204075A9 GENERAL INFORMATION:
                                              Matches
                                                                   Query Match
Best Local :
                                                                                                                                                                                                                       SEQ ID NO 50397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 50396
LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Wang, David G.

TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT FILING DATE: 2002-04-30
CURRENT FILING DATE: 2002-04-30
CURRENT FILING DATE: 2002-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                            PRIOR FILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR PPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR FILING DATE: 1999-11-23
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US 60/198,676 PRIOR FILING DATE: 2000-04-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/218,006 PRIOR FILING DATE: 2000-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/146,002 PRIOR FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR APPLICATION NUMBER: US 60/198,676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILE REFERENCE:
                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       264
                                                                                                                                                                                                    590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l Similarity 76.3
29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ION: Polymorphisms in the Human Genome
108827.129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45.4%;
76.3%;
                                                                 45.4%;
                                          Score 23.6; DE Pred. No. 38; 0; Mismatches
                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 23.6;
Pred. No. 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38;
                                                                                    DB 12; Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 12; Length 590;
                                          9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                          Indels
                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                       Gaps
                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
PRIOR PPLICATION NUMBER: US 60/193,483
PRIOR PPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR PILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FASESEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-027-632-82972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Human US-10-027-632-50398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
PRIOR PPLICATION NUMBER: US 60/193,483
PRIOR PILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-02-24
PRIOR PILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-11-23
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
US-10-027-632-50398/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 82972, Application US/10027632 Publication No. US20030204075A9 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 50398 LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 50398, Application US/10027632 Publication No. US20030204075A9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        325720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 23.6;
Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR PRILING DATE: 2000-04-20
PRIOR FILING DATE: 2000-04-20
PRIOR FILING DATE: 2000-03-29
PRIOR PRILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-03-24
PRIOR APPLICATION NUMBER: US 60/165,363
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/166,358
PRIOR FILING DATE: 1999-01-28
PRIOR FILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-82972
                                                                                                                                                                                                                                                                          RESULT 18
US-10-027-632-82974
                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Human US-10-027-632-82973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-027-632-82973
                                                                                                                                                                                                           Sequence 82974, Application US/10027632 Publication No. US20030204075A9 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 82972
LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 82973
LENCTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 82973, Application US/10027632 Publication No. US20030204075A9 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide TITLE OF INVENTION: Polymorphisms in the Human Genome FILE REFERENCE: 108827.129
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
                 PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/218,006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 60/167,363
FILING DATE: 1999-11-23
APPLICATION NUMBER: US 60/156,358
FILING DATE: 1999-09-28
APPLICATION NUMBER: US 60/146,002
FILING DATE: 1999-08-09
APPLICATION NUMBER: US 60/198,676 FILING DATE: 2000-04-20
                                                                                                                                                                                                                                                                                                                                                               327 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     327 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 recaerrereacecrerearecrerecreerese 39
                                                                                                                                                                                                                                                                                                                                                                                          TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.4%;
76.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 23.6;
Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 23.6;
Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9;
                                                                                                                                                                                                                                                                                                                                                                                                         39
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR FILING DATE: 2000-03-29
PRIOR PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR APPLICATION NUMBER: US 60/185,358
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/167,358
PRIOR APPLICATION NUMBER: US 60/167,358
PRIOR APPLICATION NUMBER: US 60/167,358
PRIOR APPLICATION NUMBER: US 60/146,002
    밁
                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                               ; ORGANISM: Human
US-10-027-632-50396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 19
US-10-027-632-50396/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-027-632-82974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 82974
LENGTH: 590
                                                                                                                                                                                                                      SEQ ID NO 50396
LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 50396, App. GENERAL INFORMATION
                                                                                                                      Query Match
                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                               PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 1999-11-23
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR FILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/185,218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Human
                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    327
264 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29;
                                                                               29;
                       2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 recaerrereacerereareseresereserese 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/10027632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for Windows Version 4.0
                                                                                                  76.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.4%;
                                                                                                                                                                                                                                                                    Windows Version 4.0
                                                                               °.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                     Score 23.6;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 23.6;
Pred. No. 38;
                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                      DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 12;
                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9;
                                                                               Indels
                                                                                                                    Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 590;
                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

RESULT 20 US-10-027-632-50397/c

Sequence 50397, Application US/10027632
GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide

```
Ş
                                                                                                                                     ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-50398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: DNA
; ORGANISM: Human
US-10-027-632-50397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-027-632-50398/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-02-24
PRIOR TELING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-28
                                                                                                 Query Match
                                                                                                                                                                                              SEQ ID NO 50398
LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 50398, Application US/10027632
                                                              Matches
                                                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 50397
                                                                                                                                                                                                                                                                                                                                                       PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILE REFERENCE: 108827.129 CURRENT APPLICATION NUMBER: US/10/027,632 CURRENT FILING DATE: 2002-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 325720 SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 60/198,676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/218,006 PRIOR FILING DATE: 2000-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 60/146,002 PRIOR FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 60/218,006 PRIOR FILING DATE: 2000-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/027,632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/198,676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 2000-03-29
APPLICATION NUMBER: US 60/185,218
FILING DATE: 2000-02-24
                                                                                                                                                                                                                                                                            FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 60/146,002
                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 60/156,358 FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 60/167,363 FILING DATE: 1999-11-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      264
2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                          l Similarity 76.3
29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recretrirereaaececacaacactereerecetaee 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108827.129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.4%;
76.3%;
                                                                          45.4%;
                                                            0
                                                          Score 23.6; DB Pred. No. 38; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 23.6;
Pred. No. 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38;
                                                                                                 DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                          9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 590;
                                                                                            Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                          Indels
                                                        0
                                                        Gaps
                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 23
US-10-027-632-82973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                    PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILLING DATE: 2000-03-29
PRIOR PELICATION NUMBER: US 60/185,218
PRIOR FILLING DATE: 2000-02-24
PRIOR FILLING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR FILLING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Human US-10-027-632-82972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 22
US-10-027-632-82972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR APPLICATION NUMBER: US 60/185,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR FILING DATE: 1999-11-23
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-09-28
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 82973
LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 82973, Application US/10027632
GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 82972
LENGTH: 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 82972, App. GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 108827.129
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 335720
SOFTWARE: FASESEQ for Windows Version 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/10027632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.48;
76.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 23.6;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

0,

```
RESULT 25
US-10-198-846-12577
                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Human US-10-027-632-82973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-027-632-82974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 82974, Application US/10027632
GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                               Sequence 12577, Application US/10198846 Publication No. US20030099974A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 82974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Human
-10-027-632-82974
                               FILE REFERENCE: MRI-049
CURRENT APPLICATION NUMBER: US/10/198,846
CURRENT FILING DATE: 2002-07-18
PRIOR APPLICATION NUMBER: 60/306,220
PRIOR FILING DATE: 2001-07-18
NUMBER OF SEQ ID NOS: 14084
                                                                                                                                                     APPLICANT: Lillie, James
APPLICANT: Xu, Yongyao
APPLICANT: Wang, Youzhen
APPLICANT: Wang, Youzhen
APPLICANT: Steinmann, Kathleen
TITLE OF INVENTION: HOWEL GENES, COMPOSITIONS,
TITLE OF INVENTION: FOR IDENTIFICATION, ASSES
TITLE OF INVENTION: THERAPY OF BREAST CANCER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 60/146,002 PRIOR FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR FILING DATE: 1999-11-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
SOFTWARE: FastSEQ for Windows Version 4.0 EQ ID NO 12577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 60/156,358 PRIOR FILING DATE: 1999-09-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE: 108827.129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327
                                                                                                                                                                                                                                                                                                                                                                                                                                        327 TGCTGTTTTCTCAAGCCCACAACACTCTCGTCCCTACC 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 TGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 45.4%;
Similarity 76.3%;
29; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45.4%;
76.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 23.6; DI
Pred. No. 38;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 23.6; DE Pred. No. 38; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                             ASSESSMENT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 590;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                             AND METHODS
PREVENTION,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         °,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
RESULT 27
US-10-156-761-5574
                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA ; ORGANISM: Streptomyces atroolivaceus US-10-314-657-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 26
US-10-314-657-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-05-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-198-846-12577
                                                                                                                           APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROS
APPLICANT: SHIBA, TADAYOSH
APPLICANT: SAKAKI, YOSHIYU
APPLICANT: HATTORI, MASAHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Discrete Acyltransferases Associated with Type I Polyketide
TITLE OF INVENTION: Synthases and Methods of Use
FILE REFERENCE: 054030-0021
CURRENT APPLICATION NUMBER: US/10/314,657
CURRENT FILING DATE: 2002-12-09
PRIOR APPLICATION NUMBER: PCT/USO2/08937
PRIOR FILING DATE: 2002-03-22
PRIOR APPLICATION NUMBER: US 60/278,935
PRIOR APPLICATION NUMBER: US 60/278,935
PRIOR FILING DATE: 2001-03-26
NUMBER OF SEQ ID NOS: 214
SOPTWARE: Patentin version 3.2
SEQ ID NO 1
                                                                                                                                                                                                                                                                      GENERAL INFORMATION
                                                                                                                                                                                                                                                                                         Sequence 5574, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 29; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/10314657 Publication No. US20030175888A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: SHEN, Ben
APPLICANT: CHENG, Yi-Qia
APPLICANT: TANG, Gong-Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens

FEATURE:

FEATURE:

NAME/KEY: misc_feature

LOCATION: 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136

OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                 34257 CGCTCTCGCCGCGCTCGGCGCGCCCTGCTCGCCGGTG 34220
                                                                                                                                                                                                                                                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                            CGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yi-Qiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ,,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 23.6;
Pred. No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 23.6;
Pred. No. 37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 135638;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

PRIOR APPLICATION NUMBER: JP 2001-272697 PRIOR FILING DATE: 2001-08-02 NUMBER OF SEQ ID NOS: 15109

```
APPLICANT: Sherman, D

APPLICANT: Mao, Y

APPLICANT: Waroglu, M

APPLICANT: He, M

APPLICANT: He, M

APPLICANT: Sheldon, P

TITLE OF INVENTION: Mitomycin biosynthetic ger

FILE REFERENCE: 600.456US1

CURRENT APPLICATION NUMBER: US/10/267,255

CURRENT FILING DATE: 2002-10-09

PRIOR APPLICATION NUMBER: US 09/266,965

PRIOR PILING DATE: 1999-03-12

PRIOR APPLICATION NUMBER: US 08/624,447

PRIOR APPLICATION NUMBER: US 08/624,447

PRIOR FILING DATE: 1996-08-19
                                                                                                                                                                                                                                                                                                                                                   RESULT 29
US-10-267-255-83
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: He, Min
APPLICANT: Sheldon, Paul
APPLICANT: Sheldon, Paul
TITLE OF INVENTION: MITOMYCIN BIOSYNTHETIC GENE CLUSTER
FILE REFERENCE: 600.530US1
CURRENT APPLICATION NUMBER: US/09/953,348
CURRENT FILING DATE: 2001-09-12
PRIOR APPLICATION NUMBER: PCT/US00/06394
PRIOR APPLICATION NUMBER: PCT/US00/06394
PRIOR FILING DATE: 2000-03-10
PRIOR APPLICATION NUMBER: 09/266965
PRIOR APPLICATION NUMBER: 09/266965
PRIOR FILING DATE: 1999-03-12
PRIOR FILING DATE: 1999-03-12
NUMBER: OF SEO ID NOS: 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; LENGTH: 2466
; TYPE: DNA
; ORGANISM: Streptomyces lavendulae
US-09-953-348-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-953-348-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-156-761-5574
                                                                                                                                                                                                                                                                                          Sequence 83, Applica Publication No. US20 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 83, Application US/09953348 Publication No. US20030134398A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: FASTSEQ for Windows Version 4.0 SEQ ID NO 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 45.0
Best Local Similarity 67.3
Matches 33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 5574
LENGTH: 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Sherman, David. H
APPLICANT: Mao, Yingqing
APPLICANT: Varoglu, Mustafa
APPLICANT: He, Min
APPLICANT: Sheldon, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: CDS
LOCATION: (1)..(1029)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
FILING DATE: 1994-10-06
                  APPLICATION NUMBER: PCT/US94/11279
                                                                                                                                                                                                                                                                                                                                                                                                                                   48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
30; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGTCGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                   cecrecceccidarecccicercecciceccacceca 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGCCGTACGTCCTCCTCACCGCCCTGCTCGCCGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                              Application US/10267255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45.0%;
73.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 23.4;
Pred. No. 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 23.4;
Pred. No. 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42;
                                                                                                                                                                       gene cluster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
TITLE OF INVENTION: MITOMYCIN BIOSYNTHETIC GENE CLUSTER
FILE REFERENCE: 600.530US1
CURRENT APPLICATION NUMBER: US/09/953,348
CURRENT FILING DATE: 2001-09-12
PRIOR APPLICATION NUMBER: PCT/US00/06394
PRIOR FILING DATE: 2000-03-10
PRIOR APPLICATION NUMBER: 09/266965
PRIOR APPLICATION NUMBER: 09/266965
PRIOR APPLICATION NUMBER: 09/266965
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 153
SOFTMARE: FastSEQ for Windows Version 4.0
SEQ ID NO 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 75, Application US/09953348
Publication No. US20030134398A1
GENERAL INFORMATION:
APPLICANT: Sherman, David. H
APPLICANT: Mao, Yingqing
APPLICANT: Mao, Yingqing
APPLICANT: He, Min
APPLICANT: He, Min
APPLICANT: Sheldon, Paul
TITLE OF INVENTION.
                                                                                                                                                                                                                                                     RESULT 31
US-10-267-255-75
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-953-348-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Streptomyces lavendulae US-10-267-255-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-953-348-75
                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                            Sequence 75, Ap
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: FOR SEQ ID NO 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                APPLICANT: Sherman, D
APPLICANT: Mao, Y
APPLICANT: Waroglu, M
APPLICANT: Varoglu, M
APPLICANT: He, M
APPLICANT: Sheldon, P
TITLE OF INVENTION: Mitomycin biosynthetic gene cluster
FILE REFERENCE: 600.456US1
CURRENT APPLICATION NUMBER: US/10/267,255
CURRENT FILING DATE: 2002-10-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 08/133,963
PRIOR FILING DATE: 1993-10-07
NUMBER OF SEQ ID NOS: 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Streptomyces lavendulae
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: unsure
LOCATION: (302)...(302)
OTHER INFORMATION: n is a or t or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 2466
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 18034
                                                                                                                                                                                                                                                                                                                                                                                                                               Match 45.0%;
Local Similarity 73.2%;
                                                                                                                                                                                                                                                                                                                                   11562
APPLICATION NUMBER: US 09/266,965
                                                                                                                                                                                                                                                                                                                                                                                                            30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                    9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                 CGCTGCCGCCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 11602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCTGCCGCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 88
                                                                                                                                                                                                                                Application US/10267255
                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                  US20030124689A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                               Score 23.4; DB 12;
Pred. No. 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 23.4;
                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                          11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 18034;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2466;
                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT 33
US-09-878-574-12667/c
; Sequence 12667, Application US/09878574
; Patent No. US20020110548A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: unsure; LOCATION: (302)...(302); OTHER INFORMATION: n is a or t or g or US-10-267-255-75
                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 75
LENGTH: 18034
                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 30; Conserv
                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: PCT/US94/1127
PRIOR FILING DATE: 1994-10-06
PRIOR APPLICATION NUMBER: US 08/133,963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE: 1993-10-07 NUMBER OF SEQ ID NOS: 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 1999-03-12
PRIOR APPLICATION NUMBER: US 08/624,447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 1996-08-19
PRIOR APPLICATION NUMBER: PCT/US94/11279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA ORGANISM: Streptomyces lavendulae
                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
LOCATION: (4187715)
OTHER INFORMATION: a, t, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                        6765271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11562 CGCTGCCGCCCTGATGGCCCTCGTCGCCTCCGGCACCGCCA 11602
                                                                                                                                                                                                              33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                          9025608
                                                                                                                                    AAGCCGTACGTCCTCCTGACCGCCCTGCTCGCCGGCCTCGCCA 6765319
                                                                                                                                                                  ATGCAGTTCTCTCACGCTCTCATCGCTCTCGCTGCCTGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                45.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45.0%;
73.2%;
                                                                                                                                                                                                                                                                                                        g, other or unknown
                                                                                                                                                                                                        Score 23.4; DE Pred. No. 31; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 23.4;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40;
                                                                                                                                                                                                                                                DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11;
                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 18034;
                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                              Length 9025608;
                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                            0
```

```
APPLICANT: Leach, Martin D.
APPLICANT: Mehraban, Fuad,
APPLICANT: Conley, Pamela
APPLICANT: Law, Debbie
APPLICANT: Law, Debbie
ITITLE OF INVENTION: No. US20020082206A1el Polynucleotides from Athe
TITLE OF INVENTION: UNMBER: US/09/867,550
CURRENT APPLICATION NUMBER: US/09/867,550
CURRENT FILING DATE: 2001-09-20
PRIOR APPLICATION NUMBER: USSN 60/208,427
PRIOR APPLICATION NUMBER: USSN 60/208,427
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 2125
SOPTWARE: FastSEQ for Windows Version 4.0
SEQ ID 023
TENGTU- 4E0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Byrum, Joseph R.

APPLICANT: La Rosa, Thomas J.

APPLICANT: Thompson, Michael D.

TITLE OF INVENTION: Nucleic Acid Molecules and
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21(15401)B

CURRENT APPLICATION NUMBER: US/09/878,574

CURRENT FILING DATE: 2001-12-21

PRIOR APPLICATION NUMBER: 09/333,535

PRIOR APPLICATION NUMBER: 09/333,535

PRIOR FILING DATE: 1999-06-14

NUMBER OF SEQ ID NOS: 15775

SEQ ID NO 12667

LENGTH: 271
                                                                                                                                                      LENGTH: 450
TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(31)
OTHER INFORMATION: wherein any n is one
US-09-867-550-223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
  밁
                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-867-550-223/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-878-574-12667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No. US20020082206A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 223,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                             Matches
                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: unsure
LOCATION: (1)..(271)
OTHER INFORMATION: unsure at
OTHER INFORMATION: Clone ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Glycine max
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                              Local
207 CTCGATCTCGGCGGTCTCGTCGCGGCCTTCCTCGCC
                       13 CACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59 TOTGTOTGTOTCATCGCTCACTCCATTTGTGGCCACGCCAGT 16
                                                                             28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         œ
                                                                           Similarity 77.8
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rerereacererearesereresereses escentiones si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/09867550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                            44.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.6%;
                                                                           Score 23.2; D
Pred. No. 52;
O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 23.2; D
Pred. No. 53;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  all n locations
701066061H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                             0,
                                                                                                                                                                              of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and Other Molecules Associated with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG
                                                                                                                 DB 9;
                                                                                                                                                                           or t or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                           8,
                                                                                                                 Length 450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 271;
                                                                             Indels
                                                                                                                                                                              or
                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Atherogenic Cells
                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                             0
```

an

RESULT 35 US-10-029-386-21891

Sequence 21891, Application US/10029386 Publication No. US20030194704A1

```
US-10-029-386-8191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                        US-10-029-386-8191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David K.
APPLICANT: Hanzel, David K.
APPLICANT: HOLD HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FOR TITLE OF INVENTION: EXPRESSION ANALYSIS TWO FILE REFERENCE, AEOMICA-X-2 CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT FILING DATE: 2001-12-20
NUMBER OF SEQ ID NOS: 34288
SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
SEQ ID NO 88191
                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 8191, Application US/10029386 Publication No. US20030194704A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K.
TITLE OF INVENTION: EXPRESSION ANALYSIS TWO
TITLE OF INVENTION: EXPRESSION ANALYSIS TWO
FILE REFERENCE: AEOMICA-X-2
CURRENT APPLICATION NUMBER: US/10/029,386
CURRENT FILING DATE: 2001-12-20
NUMBER OF SEQ ID NOS: 34288
SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 21891
                                                                                                                                                                                                   FEATURE:

OTHER INFORMATION: MAP TO CHR16.3

OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 1.5

OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 1.7

OTHER INFORMATION: EXPRESSED IN HELA, SIGNAL = 3.1

OTHER INFORMATION: EXPRESSED IN HEART, SIGNAL = 2.8

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 2.5

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 2.5

OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 2.5

OTHER INFORMATION: STHUMAN HIT: AW295242.1, EVALUE 3.00e-77

OTHER INFORMATION: SWISSPROT HIT: O75351, EVALUE 9.00e-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: MAP TO CHR16.3
OTHER INFORMATION: EXPRESSED IN BABIN, SIGNAL = 1.5
OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 1.7
OTHER INFORMATION: EXPRESSED IN HELA, SIGNAL = 3.1
OTHER INFORMATION: EXPRESSED IN HEART, SIGNAL = 2.8
OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL = 2.5
OTHER INFORMATION: SITSPROT HIT: 0.75351, EVALUE 3.00e-25
OTHER INFORMATION: NT HIT: AF282903.1, EVALUE 0.00e+00
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 597
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH: 497
                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           110 CTCGAATGCTCTCCTTGGCCTTGTCGCTGTGGGCCTCATCTGTG 153
                                                                                 l Similarity 70.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 CTCTCACGCTCTCATCGCTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 44.6%;
l Similarity 70.5%;
31; Conservative
CTCTCACGCTCTCATCGCTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                       70.5%;
                                                                              ; Score 23.2; DI
; Pred. No. 52;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 23.2; DI
Pred. No. 52;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 12; Length 497;
                                                                                                                               DB 12;
                                                                                 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13;
                                                                                                                               Length 597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                     ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169 CTCGAATGCTCTCCTTGGCCTTGTCGCTGTGGGCCTCATCTGTG
```

```
Sequence 37972, Application US/09918995

Publication No. US20030073623A1

GENERAL INFORMATION:
APPLICANT: Hyseq, Inc.
TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES OBTITLE OF INVENTION: FROM VARIOUS CDNA LIBRARIES
FILE REFERENCE: 20411-756
CURRENT APPLICATION NUMBER: US/09/918,995
CURRENT FILING DATE: 2001-07-30
PRIOR APPLICATION NUMBER: US/09/235,076
PRIOR APPLICATION NUMBER: US/09/235,076
PRIOR FILING DATE: 1999-01-20
NUMBER OF SEQ ID NOS: 38054
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 37972
                                                                                                                                                            ; NAME/KEY: CDS
; LOCATION: (1)..(939)
US-10-156-761-4691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIGAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHARKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 38
US-10-156-761-4691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-918-995-37972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 37
US-09-918-995-37972/c
                                                                  Query Match
Best Local Similarity
Matches 32; Conserv
                                                                                                                                                                                                                                                                                          SEQ ID NO 4691
LENGTH: 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4691, Application US/10156761 Publication No. US20030119018A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 15109
                                                                                                                                                                                                                                            ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
LOCATION: (1)...(492)
OTHER INFORMATION: n = A,T,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
                                                                                                                                                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match 44.2%;
Local Similarity 68.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134 CCGTTCTCTCCCCTTTCCCCTCCTGCTGGTTCCTGGCATCGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 CAGITCICACGCICICATCGCICTCGCICGCCGGCCICGCCAG 50
TGCAGTTCTCTCACGCTCTCATCGCTCTCGTTCGCTGCCGGCCTCGCC 48
                                                                       44.2%;
ilarity 68.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                    Score 23; DB
Pred. No. 60;
0; Mismatches
                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 23; DB
Pred. No. 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                         DB 14; Length 939; 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 11; Length 492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OBTAINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

0

```
Sequence 11092, Application US/09960352

Sequence 11092, Application US/09960352

Patent No. US20020137139A1

GENERAL INFORMATION:

APPLICANT: Warren, Wesley C.

APPLICANT: Tao, Nengbing
APPLICANT: Byatt, John C.

APPLICANT: Warren, Nespapan

TITLE OF INVENTION: NUCLEIC ACID AND OTHER MOLECULES ASSOCIATED WITH LACTATION AND TITLE OF INVENTION: MUSCLE AND FAT DEPOSITION

FILLE REFERENCE: 16511.006/37-21(10298)C

CURRENT APPLICATION NUMBER: US/09/960,352

CURRENT FILING DATE: 2001-09-24

NUMBER OF SEQ ID NOS: 15112

SEQ ID NO 11092

LENGTH: 379

TYPE: DNA

ORGANISM: Bos taurus

OTHER INFORMATION: Clone ID: 48-BOVMS1-002-Q1-E1-D12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Warren, Wesley C.
APPLICANT: Tao, Nengbing
APPLICANT: Byatt, John C.
APPLICANT: Byatt, John C.
APPLICANT: Mathialagan, Nagappan
TITLE OF INVENTION: NUCLEIC ACID AND OTHER MOLECULES ASSOCIATED WITH LACTATION AND
TITLE OF INVENTION: MUSCLE AND FAT DEPOSITION
FILE REFERENCE: 16511.006/37-21(10298)C
CURRENT APPLICATION NUMBER: US/09/960,352
CURRENT FILING DATE: 2001-09-24
NUMBER OF SEQ ID NOS: 15112
SEQ ID NO 476
LENGTH: 322
TYPE: DNA
ORGANISM: Bos taurus
OTHER INFORMATION: Clone ID: 03-BOVMS1-015-Q1-E1-A11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-960-352-476
Sequence 476, Application US/09960352
Patent No. US20020137139A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
Search completed: November 13, 2003, 09:48:44 Job time: 244 secs
                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 40
US-09-960-352-11092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                       Query Match
Best Local S
Matches 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 30; Conservat
                                                                                 281 TATCGCCCGCTTCCGCTTTCTTCGCTTTCTCTCGCCA 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 281 TATCGCCCGCTCCTTTCGCTTTCGTCCCTTTCTCGCCA 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30; Conservative
                                                                                                                      8 TCTCTCACGCTCTCATCGCTCTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                       ch 43.8%;
l Similarity 71.4%;
30; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 Terereacecretarecererecrecececerecea 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCAGCGCCCCGCGCCCTGGACGGCCTGGTCGCCGACGGCCTCGTC 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43.8%;
                                                                                                                                                                       ; Score 22.8; DB; Pred. No. 73; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 22.8; DE ; Pred. No. 73; 0; Mismatches
                                                                                                                                                                                                                 DB 10; Length 379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10; Length 322;
                                                                                                                                                                       12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12; Indels
                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٥,
```

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-1
52
1 atgcagttctctca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       November 13, 2003, 08:54:45 ; Search time 1969 Seconds (without alignments) 1080.396 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2888711 seqs, 20454813386 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Listing first 1000 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenEmbl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atgcagttctctcacgctct.....cgctgccggcctcgccagtg
                                                                                                                                                                                                                                                                                                            gb_pat:
gb_ph:
gb_ph:
gb_pr:
gb_ro:
gb_ro:
gb_sts:
gb_sts:
gb_un:
gb_vi:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                            gb_ba:*
gb_htg:*
gb_in:*
                                   em htg_pln:*
em htg_rod:*
em htg_mam:*
em htg_vrt:*
em_sy:*
                                                                                       em_vi:*
em_htg_hum:*
em_htg_inv:*
em_htg_other:*
em_htg_mus:*
  em_sy:*
em_htgo_hum:*
em_htgo_mus:*
em_htgo_other:
                                                                                                                                                em_ro: *
em_sts: *
                                                                                                                                                                                  em_ov: *
em_pat: *
em_ph: *
                                                                                                                                                                                                                                                      em_fun: *
em_hum: *
em_in: *
em_mu: *
                                                                                                                                                                                                                               em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000000000
_htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.6 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5777422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52
```

Pred. No. S. the number of results predicted by chance to have

0000 0 00000

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.

Score

Query Match

Length

DB

ij

ი 80 7 2610 10145 11951 11764 7 11764 7 15719 7 62730 84985 149500 119500 1196100 170498 300600 214023 243762 254350 259856 259856 277058 294609 75162 99277 1101579 1123010 123010 124612 127091 1137841 119349 157371 189893 189893 198282 198282 198282 201451 161518 173093 76093 134963 146670 156485 157945 172081 298900 1500 185916 63781 64271 AC00833 AC013254 AC013254 AC013254 AC007415 AC007415 AC007415 AC013831 BX510955 BX255907 AC013424 AC013424 AC013424 AC013424 AC013789 AE003789 AE003789 AE003789 AE003789 AE003789 AE004719 AE008035 AE009069 AE0020031 SNA278573 AC020031 SNA278573 AC0292718 AC092519 AC092519 AP004776 AP004776 AP142898 AY142750 AC009913 AC009913 AC018480 AC010548 AC010548 AC009746 AC009746 AC105442 AC0098797 AC009746 AC105442 AC0098797 AC0098797 AC0098797 AC0098797 AC0098797 AC0098797 AC010915 AP003250 AP005509 AP005742 CIU51200 AF013256 AE004517 AE012448 AF416330 AP005679 CIU39835 CIU32518 AC007587 AE008035 Agrobacte AE009069 Agrobacte AJ416457 Bos tauru AC020031 Drosophil AJ278573 Streptomy AC138636 Leishmani AC092778 Oryza sat AL645542 Mouse DNA AC008094 Drosophil AC092519 Felis cat AC132901 Mus muscu AC116284 Rattus no AE003789 AJ421781 Z48222 O. Y08560 B. AE004719 AC013424 AC016159 AE003787 AP005952 AC009353 AP003935 AC119676 AC012389 AC009843 AC010915 AC134236 AP005742 AP004776 AP005937 AY142898 AY262750 AE012448 AF416330 AP005679 AC009746 AC105442 AP003250 AP005509 U39835 Coccidioi U32518 Coccidioi U51200 Coccidioi AE004517 Pseudomon Description 955 Danio rer 957 Danio rer 967 Danio rer 424 Drosophil 424 Drosophil 759 Drosophil 767 Drosophil 767 Bradyrhiz 769 Drosophil 761 Persea am 2 O. cuniculus 6 B. Caurus mR Felis cat Mus muscu Rattus no Agrobacte Agrobacte Bos tauru Drosophil Streptomy Drosophil Drosophil Drosophil Danio rer Drosophil Oryza sat Drosophil Oryza sat Drosophil Oryza sat Drosophil Homo sapi Drosophil Drosophil Drosophil Homo sapi Drosophil Drosophil Homo sapi Drosophil Drosophil Drosophil Drosophil Leishmani Ruegeria Oryza sat Fladyrhi Bradyrhi Hlayverom Drosophil Drosophil Leishmani

,	C 137	c 135	C 133	132		C 128	: 12	2 2	. L	12	c 121	. 12	119	117	116	115	113	11	2 110	109	c 108		10	10	c 102	10	2 0	9	c 97	ovo	C 94		ο ω	wα		C 87	9.5	0 0 84		81	 V 0	c 78	7 -		74	. 7	c 70	שנ	C 68	c 66	
,	166	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16 16	16	16 16	16	16	16	16	16	16	16	16	16 16	16	17	17	17	17	17	17	
			(ı w	wu	. w	ພ	ندا ندا		wı					w	س و.	ı w	ωı	ساند	ıω	ωı	(· Lu	سانسا		w	. Lu	w I	نيا نيا	ιω	w t	υ	wu	ı w	ωL	ı w	w t	ມພ	W	س س	. .	w w	. w	u u	υ	ωı	υw	
	8 13833																																														7 2447	١.٨١			
•	35 8 8		. 0	Ui a	٠.٥	00	, 0	00	יט כ	0	0 0	ı w	7 1	- 6	.4.	w w	9 00	σ,	υO	. 00	.D. (D ~	44.1	7.	70	. Ν	. A	1 6	7 0	J (0)	0	5 C	, 0	40 4	• w	ωv	υ (- 0	ıω	70	ν ~	ω.	- C		O &		0 ~	, –	0, 0		
	AC11333/ AC119148 AB0000485	AC079021	AC008905	BX324148	ij	LMFLCHR12_14 LMFLCHR31_20	֡֝֡֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	AC113913 4	AC105319	AP005816	AC020009 AR010075	AC027135	AC004422	AC139009	AC080104	AB089954	AC069162	AC058781	AC019935	AC140855	AF090339	AY102170	AE005841	AE007262	RM106EXOB		AE004546 PVI422133	AE014662	AE011672	AY119603	BC037556	AF419622 U93704	SRSENRS	AF419623	BC015581	DROEX02	BC027475	BC043607	AX358336	BC014040	PSEMVAAB	PSEMVAB	AF297656 DME426941	HSA326699	AC126697 AP005949	AC091704	AE003678 AC119964	AC096278	AC114574	AP003431	
arouosoo nomo sapi	AC113337 Genomic s AC119148 Oryza sat	AC079021 Oryza sat	AC008905 Homo sapi	ALUZI684 ARADIGOPS BX324148 Danio rer	Continuation (4 of	Continuation (15 o Continuation (21 o	Continuation (14 o	AC091510 Leishmani	AC105319 Oryza sat	AP005816 Oryza sat	ACO20009 Drosophil	AC027135 Arabidops	AC004422 Drosophil	AC139009 Homo sapi	AC080104 Homo sapi	ACUYIB4 / HOMO Sapi	AC069162 Homo sapi	AC058781 Leishmani	AC019935 Drosophil	AC140855 Botryllus	AF090339 Rhea amer	AY102170 Canis fam	AE005841 Caulobact	AE007262 Sinorhizo	AJ225561 Rhizobium	AE001951 Deinococc	AE004546 Pseudomon AJ422133 Pseudorah	AE014662 Bifidobac	AE011672 Xanthomon	AY119603 Drosophil	BC037556 Homo sapi	AF419622 Drosophil	Y14336 Streptomyce	AF419623 Drosophil	BC015581 Homo sapi	L07660 Drosophila	BC027475 Homo sapi	AB029336 Burkholde BC043607 Homo sapi	AX358336 Sequence	BC014040 Homo sapi	M31807 P.mevalonii	M24016 P.mevaloni	AF297656 Psilotum	АЛЗ26699 Ното варі	AC126697 Rattus no AP005949 Bradvrhiz	AC091704 Mus muscu	AE003678 Drosophil AC119964 Mus muscu	AC096278 Rattus no	AC114574 Mus muscu	AP003431 Oryza sat	
	209 1		206	204	203							193		190						182		179	178	177		174		171			167				161								149		146	145					
ω		ω u	3	<u>ი</u> ი	3	ה ה ש	3	ה מש	6	о о ш и	n or	6	שנ	, in	თ ი	7 M	6 3	on o	, in	6	6 6 W U	90	6	ט ע	. m	ض د د	ה מע	9	<u>ი</u> ი	. ω	on a	υo	ص د	ה ש ש	6	ი ი ი	6	שנש	· ω	თ თ	. w	ض د د	ה מע		n n	6 3	ი ი ა ა		ص د س د	, 6n	
.8 3070	0.8 30605	.8 3012 .8 3033	.8 3000	.8 2974 .8 2999	.8 2957	.8 2907	.8 2768	.8 2589	.8 2483	.8 2462	.8 2452	.8 2397	.8 2295 .8 2341	.8 2268	.8 2196	.8 2144	.8 2097	.8 2063	.8 2021	.8 2017	. B 2009	.8 1986	.8 1933	8 1915	.8 1906	.8 1901	.8 1886	.8 1886	.8 1852 .8 1853	.8 1852	. 8 1845	.8 1830	.8 1827	8 1801	.8 1793	.8 1771 .8 1774	.8 1768	.8 1723 .8 1745	.8 1699	0691 8°	.8 1634	.8 1633	.8 1607	.8 1603	.8 1570	.8 1534	.8 1526 .8 1533	. 8 1523	.8 1436	. 8 1394	
ω	50 1 67 8	ωμ	00	- 2	ν,	٠,	ν,	งผ	2	N K	ว เง	2	N	N	N 1	'n	10	N 1	N	ν,	ש פ	, ,	ν,	ى ب	N	2	υo	10	9 N	w	ω κ	ง	9 8	งผ	2	9 9	10	10	w	N	သော	ν ο	φœ	9 1	N N	2	N N	00	œ r	သထ	
AE017079	RME603645 AE017063	AP005950 AE003500	AE017103	AC125817 AP005963	AC096061	AE017025	AC095481	AC099160	AC096062	AC113164	AC137771	AC106535	AC095750	AC099458	AC111438	AC112406	AL772166	AC130934	AC026813	AC141171	AC103809	AE001863	AC021977	AC008865	AC108411	AC121140	AC027045	AL772282	AC107006 AC123908	AC092401	AC107196 AC099022	AC008401	AP003176	AC018798	AC122991	AC100786 AC008786	AL772313	w ~	AC008321	AP004001 AC142178	OSJN00127		HSA258F22	w	AP003860	AP005907	AC141704 AC104160	AC123898	AC137928	AC090441	
⊳	A A	ĄΑ	Α:	8 8	<u> </u>	ÞΑ	Ą.	PΑ	₽:	2 0	۸.	₽:	ž B	A	≥ 1	• >		₽ ≄	۰۶	≱ :	₽ ⊅	• >	.≽:	₽ ⊅	· A	מ אַ	2 ⊅	_ :	A 4	.	≱⊁	· »	> :	• P	A	P P		t t	A:	≥ >	· >	נק	PΑ	. ⊅ :	ÞÞ	A	ĄΑ	• >	p 3	. ₹ \$	
E01707	AL603645 AE017063	E003500	E01710	C12581	C096063	E01702	C09548	C09916	C096062	X47022	C13777	C106531	X00540	C09945	C111438	C11240	AL7721	C13093	C02681	C14117	C10380	E00186	C02197	C00886	C10841	C121140	C02704	AL77228	C10700	C09240	C099021	C00840	P00317	C01879	C12299	C10078	AL7723	X47016	C00832	P00400	L60699	C00833	113265	009061	P00386	P00590	C14170	C12389	C137928	C09044	
Oryza	Rhizobiu Oryza sa	Bradyr	Oryza	Rattus	Rattus	Bacillus	Rattus n	Rattu	Rattus r	Danio re	Ното вар	Rattus n	Danio re	Rattus n	B Rattus no	Rattus	Mouse	A Rattus no	Mus mus	Rattue n	Homo sapi	Deinococ	ното вар	Drosophil	Mus musc	Mus muscu	5 Homo sapi	82 Mouse DNA	6 Rattus no 8 Homo sapi	Drosophil	Drosophil	Homo sapi	Homo sapi	3 Homo sapi	Rattus no	Homo sapi	13 Mouse DNA	l Danio rer	Drosophil	Rattus no	Oryza sat	Drosophil	7 Human DNA	Homo sapi	Oryza sat	7 Oryza sat	4 Apis mell O Canis fam	Medicago	Oryza sat	Oryza sat	

C 280 281 282 283 284	c 277 c 278 c 279	227	227	27	200	200		2 2	C 262	2 0	25	C 257	25	2 20	c 252	22 1	2 4 2	2 22 1	C 245	2 2	c 241 c 242	2 2	200	c 236	2 2	C 233	3 12	229 230	228	C 226	 N N	223	C 221	22	2 2	c 216 c 217	22	214
15 15 15	15 15	15 15	15	15	15	155	15	15	15	15	15	15	15	15	15	15	15	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	15		15	15	15.	15	15	15	, 15	15	15	J 15	15	15	15	15	15	15	16	16
28.8 28.8 28.8								œ œ				ກ ເສ		0 00 1	œ œ	ω α		- @ (ω.	, co	۳.۵	Φα		00	œ .e		<u>.</u>		8	D (D)	Φ.	80 0			۰.	8 0	0.8	0 .
2556 2580 2598 2598 2617	2554 2554 2556	255 255 4	2554	2554	2520	2467	2212	2112	2078	2024	2000	1769	1724	1561	1374 1491	1351	1314	1190	1113	1053	927 1032	903	859	694	671 680	667	571 571	535 536	471	4 4	331 423	331	3 G C C	329	260		349980	
6 9 6 9 9 B A A B A																																						
AK022879 BC008766 AX714945 AK057694 BD158744	3R303066 3R303071 3159688	3R303063 3R303064	3R303060 3R303061	3R303058 3R303059	206328	7071759 7044726	7140043	030005	2033099	3C027051	(508283	C112664	JU12641	7056192	5222E131 7U90533	232670	327528	(654314	4E313202	3A494772	C017347 (653040 -	4ZEMI	ABKCHVG	£438233	SA331133 ZEMADSC	0147972	4ZEM2	383520 AY199102	0025746	3A306168	0AVDCG R233241	150 VAA 1F421195	(165174	ASSVCG	571E3R	(553949 (020310	(492782	003002
AK022879 BC008766 AX714945 AK057694 BD158744	AJ3030 AJ3030 BD1590	AJ3030 AJ3030	AJ3030 AJ3030	AJ3031 AJ3031	AF206	AY071 U4472	AY140	BC041	BC033	BC02	AX112	BC004	AF207	AY056	AL450	AF324 AF232	AF327	AX654	AJ313	AJ494	BC017	X8533	L0178	AF438	AJ331	BD147	X8533	G835 AY19	BD025	AJ306	X715	AF42	AY165	X176	Z6268	AX553 AY020	AX492	AP003
879 Homo sapi 766 Homo sapi 945 Sequence 694 Homo sapi	066 Bord 071 Bord	062 Bord 063 Bord	060 Bord 061 Bord	058 Bord 059 Bord	356 Gall 328 Homo	759 Dros 5 Penici	043 Arab	902 Homo	193 Pieu	7051 Mus	283 Segu	290 Homo	593 Arab l Coturn	192 Arab	314 Nove	719 Arab 570 Prot	528 Arab	314 Sequ	202 Leis	772 Uncu	347 Homo	4 Z.mays 5 Z.mays	9 Orycto	233 Leis	133 Homo	972 Prim	5 Z.mays	3520 S208P66 199102 Arabi	746 Segu	168 uncu	99 Dappl	1195 Арр 1195 Арр	174 Tomi	Appl	l sap) Seq	Seq	Mes
sapi sapi sapi sapi	etell etell er fo	etell etell	etell etell	etell etell	us ga sapi	ophil llium .	idops	sapi	m sat	muscu	ence	sapi	idops ix ja	idops	1 hum	opter	idops	ence	hmani	lture	sapi	mRNA	lagus	hmani	sapi	er fo	mRNA	6674FH bidops	ence	8 unculture	e Appl	le sca	cus p	ne leuk e scar	'n	nce a	nce	rhizo
	C 350		C 345	4.1.1.1	341 c 342	c 339 340			c 334						C 325		c 321		c 318			c 312	311			305		c 302	301	299	c 297	296	294		c 291		288	287
354 31	350	347 348 1	345 346	343 443	341 1 342 1	339 340	338	336	334 335	333	331	330	328 329	327	325	323] 324]	321 J	320	318	316	314	312	311	309	307	06 G	304	302	2 6	996	297	96	94	292	291	289	88	87
353 353 354 15 2355 15 2356 15 22	350 15 2 351 15 2	347 15 2 348 15 2	345 15 2 346 15 2	343 15 2 344 15 2	341 15 2 342 15 2	339 15 2 340 15 2	337 15 2 338 15 2	336 15 2	334 15 2 335 15 2	333 15 2	331 15 2	330 15 2	328 15 2 329 15 2	327 15 2	325	323 15 2 324 15 2	321 15 2 322 15 2	320 15 2	318 15	316 15	314 15	312 15 2 313 15 2	310 15 2	309 15	307 15 2	05 15 2	304 15	302 15 2	01 15	999	297 15 2	96 15	94 15	292 15 2 293 15 2	291 15	289 15 2 290 15 2	88 15	87 15
353 354 355 355 355 356 356 15 28.8 356 28.8	350 15 28.8 351 15 28.8	347 15 28.8 348 15 28.8	345 15 28.8 346 15 28.8	343 15 28.8 344 15 28.8	341 15 28.8 342 15 28.8	339 15 28.8 340 15 28.8	337 15 28.8 338 15 28.8	336 15 28.8	334 15 28.8 335 15 28.8	333 15 28.8	331 15 28.8 332 15 28.8	330 15 28.8	328 15 28.8 329 15 28.8	327 15 28.8	325 15 28.8	323 15 28.8 324 15 28.8	321 15 28.8 322 15 28.8	320 15 28.8 320 15 28.8	318 15 28.8	316 15 28.8	314 15 28.8	312 15 28.8 313 15 28.8	310 15 28.8 311 15 28.8	309 15 28.8	307 15 28.8	05 15 28.8 06 15 28.8	304 15 28.8	302 15 28.8 303 15 28.8	01 15 28.8	99 15 28.8	297 15 28.8	96 15 28.8	94 15 28.8	292 15 28.8 293 15 28.8	291 15 28.8	289 15 28.8 290 15 28.8	88 15 28.8	87 15 28 8
353 15 28.8 11431 354 15 28.8 11431 355 15 28.8 11455 356 15 28.8 11462	350 15 28.8 10734 351 15 28.8 10847 352 15 28.8 10847	347 15 28.8 10452 348 15 28.8 10510	345 15 28.8 10210 346 15 28.8 10337	343 15 28.8 10151 344 15 28.8 10205	341 15 28.8 9959 342 15 28.8 10057	339 15 28.8 9490 340 15 28.8 9926	337 15 28.8 9349 338 15 28.8 9405	336 15 28.8 7646	334 15 28.8 6443 335 15 28.8 6991	333 15 28.8 6443	331 15 28.8 6441 332 15 28.8 6442	330 15 28.8 6441	328 15 28.8 6078 329 15 28.8 6441	327 15 28.8 6059	325 15 28.8 5962	323 15 28.8 5694 324 15 28.8 5721	321 15 28.8 5369 322 15 28.8 5419	320 15 28.8 5334 320 15 28.8 5334	318 15 28.8 5118	316 15 28.8 4986	314 15 28.8 4842	312 15 28.8 4750 313 15 28.8 4800	310 15 28.8 4475 311 15 28.8 4516	309 15 28.8 4463	307 15 28.8 4198	05 15 28.8 4038 06 15 28.8 4198	304 15 28.8 3963	302 15 28.8 3514 303 15 28.8 3866	01 15 28.8 3391	99 15 28.8 2964	297 15 28.8 2837 298 15 28.8 2947	96 15 28.8 2808 96 15 28.8 2821	94 15 28.8 2808	292 15 28.8 2790 293 15 28.8 2794	291 15 28.8 2790	289 15 28.8 2702 290 15 28.8 2790	88 15 28.8 2697	87 15 28 8 2693
353 15 28. 354 15 28. 356 15 28.	350 15 28.8 10734 1 AEO 351 15 28.8 10847 1 AFI 352 15 28.8 10847 1 AFI	347 15 28.8 10452 1 AEO 348 15 28.8 10510 1 AEO	345 15 28.8 10210 1 AE0 346 15 28.8 10337 1 AE0	343 15 28.8 10151 8 AF4 344 15 28.8 10205 1 AE0	341 15 28.8 9959 1 AEO 342 15 28.8 10057 1 AEO	339 15 28.8 9490 4 AFO 340 15 28.8 9926 9 AF2	337 15 28.8 9349 1 AF1 338 15 28.8 9405 6 AX3	336 15 28.8 7646 1 AF1	334 15 28.8 6443 6 A32 335 15 28.8 6991 8 ABO	333 15 28.8 6443 6 /	331 15 28.8 6441 6 <i>J</i>	330 15 28.8 6441 6 /	328 15 28.8 6078 3 <i>I</i> 329 15 28.8 6441 6 <i>I</i>	327 15 28.8 6059 6 <i>J</i>	325 15 28.8 5962 1 N	323 15 28.8 5694 14 324 15 28.8 5721 6 <i>J</i>	321 15 28.8 5369 1 B 322 15 28.8 5419 3 D	319 15 28.8 5170 10 320 15 28.8 5334 1 I	318 15 28.8 5118 6 AR175232	316 15 28.8 4986	314 15 28.8 4842 3 AF1321	312 15 28.8 4750 3 AF19795	310 15 28.8 4475 8 311 15 28.8 4516 9	309 15 28.8 4463 8 AF35559	307 15 28.8 4198 8 ATENRA	05 15 28.8 4038 1 06 15 28.8 4198 6	304 15 28.8 3963 6	302 15 28.8 3514 3 303 15 28.8 3866 3	01 15 28.8 3391 1	99 15 28.8 2964 9	297 15 28.8 2837 9 298 15 28.8 2847 1	96 15 28.8 2808 9	94 15 28.8 2808 9	292 15 28.8 2790 9 293 15 28.8 2794 8	291 15 28.8 2790 6	289 15 28.8 2702 9 290 15 28.8 2790 6	88 15 28.8 2697 9	87 15 28.8 2693 9
353 15 28.8 11415 1 AE004889 354 15 28.8 11431 1 AF372655 355 15 28.8 11455 1 AE001906 356 15 28.8 11462 1 AE011895	350 15 28.8 10734 1 AED012845 351 15 28.8 10847 1 AF127082 352 15 28.8 10847 1 AF012026	347 15 28.8 10452 1 AE012453 348 15 28.8 10510 1 AE012870	345 15 28.8 10210 1 AE014776 346 15 28.8 10337 1 AE011691	343 15 28.8 10151 8 AF484941 344 15 28.8 10205 1 AE004830	341 15 28.8 9959 1 AE014682 342 15 28.8 10057 1 AE004871	339 15 28.8 9490 4 AF091049 340 15 28.8 9926 9 AF257305	337 15 28.8 9349 1 AF173961 338 15 28.8 9405 6 AX399934	336 15 28.8 7646 1 AF116906	334 15 28.8 6443 6 A32503 335 15 28.8 6991 B AB084921	333 15 28.8 6443 6 A07292	331 15 28.8 6441 6 AR175231	330 15 28.8 6441 6 A79570	328 15 28.8 6078 3 AB061681 329 15 28.8 6441 6 A14850	327 15 28.8 6059 6 AX281301	325 15 28.8 5962 1 MBS100PER	323 15 28.8 5694 14 HSCZCHOM 324 15 28.8 5721 6 A25910	321 15 28.8 5369 1 BPA249835 322 15 28.8 5419 3 DME238847	319 15 28.8 51/0 10 KNO426052 320 15 28.8 5334 1 BBCYAAG	318 15 28.8 5118 6 AR175232	316 15 28.8 4986 2 AC019465	314 15 28.8 4842 3 AF132179	312 15 28.8 4750 3 AF197953 313 15 28.8 4800 1 AR044751	310 15 28.8 4475 8 ZMZEMAGEN 311 15 28.8 4516 9 AB037841	309 15 28.8 4463 8 AF355592	307 15 28.8 4198 8 ATENRA	05	304 15 28.8 3963 6 AX260206	302 15 28.8 3514 3 DMSING3	00 15 28.8 2969 8 ATUS9//I 01 15 28.8 3391 1 TFALAS	99 15 28.8 2964 9 AK058012	297 15 28.8 2837 9 BC013584	95 15 28.8 2808 9 BC001843 96 15 28.8 2821 8 AF443119	94 15 28.8 2808 9 BC001655	292 15 28.8 2790 9 HSU10868 293 15 28.8 2794 8 BT004338	291 15 28.8 2790 6 AX335818	289 15 28.8 2702 9 AF203474 290 15 28.8 2790 6 AX333036	88 15 28.8 2697 9 BC044887	87 15 28.8 2693 9 BC014906
353 15 28.8 11415 1 AE004889 354 15 28.8 11431 1 AF372655 355 15 28.8 11455 1 AE001906 356 15 28.8 11462 1 AE011895	350 15 28.8 10734 1 AED012845 351 15 28.8 10847 1 AF127082 352 15 28.8 10847 1 AF012026	347 15 28.8 10452 1 AE012453 348 15 28.8 10510 1 AE012870	345 15 28.8 10210 1 AE014776 346 15 28.8 10337 1 AE011691	343 15 28.8 10151 8 AF484941 344 15 28.8 10205 1 AE004830	341 15 28.8 9959 1 AE014682 342 15 28.8 10057 1 AE004871	339 15 28.8 9490 4 AF091049 340 15 28.8 9926 9 AF257305	337 15 28.8 9349 1 AF173961 338 15 28.8 9405 6 AX399934	336 15 28.8 7646 1 AF116906	334 15 28.8 6443 6 A32503 335 15 28.8 6991 B AB084921	333 15 28.8 6443 6 A07292	331 15 28.8 6441 6 AR175231	330 15 28.8 6441 6 A79570	328 15 28.8 6078 3 AB061681 329 15 28.8 6441 6 A14850	327 15 28.8 6059 6 AX281301	325 15 28.8 5962 1 MBS100PER	323 15 28.8 5694 14 HSCZCHOM 324 15 28.8 5721 6 A25910	321 15 28.8 5369 1 BPA249835 322 15 28.8 5419 3 DME238847	319 15 28.8 51/0 10 KNO426052 320 15 28.8 5334 1 BBCYAAG	318 15 28.8 5118 6 AR175232	316 15 28.8 4986 2 AC019465	314 15 28.8 4842 3 AF132179	312 15 28.8 4750 3 AF197953 313 15 28.8 4800 1 AR044751	310 15 28.8 4475 8 ZMZEMAGEN 311 15 28.8 4516 9 AB037841	309 15 28.8 4463 8 AF355592	307 15 28.8 4198 8 ATENRA	05	304 15 28.8 3963 6 AX260206	302 15 28.8 3514 3 DMSING3	00 15 28.8 2969 8 ATUS9//I 01 15 28.8 3391 1 TFALAS	99 15 28.8 2964 9 AK058012	297 15 28.8 2837 9 BC013584	95 15 28.8 2808 9 BC001843 96 15 28.8 2821 8 AF443119	94 15 28.8 2808 9 BC001655	292 15 28.8 2790 9 HSU10868 293 15 28.8 2794 8 BT004338	291 15 28.8 2790 6 AX335818	289 15 28.8 2702 9 AF203474 290 15 28.8 2790 6 AX333036	88 15 28.8 2697 9 BC044887	87 15 28.8 2693 9 BC014906
353 15 28.8 11415 1 AEO 354 15 28.8 11431 1 AP3 355 15 28.8 11455 1 AEO 356 15 28.8 11462 1 AEO	350 15 28.8 10734 1 AED012845 351 15 28.8 10847 1 AF127082 352 15 28.8 10847 1 AF012026	347 15 28.8 10452 1 AE012453 348 15 28.8 10510 1 AE012870	345 15 28.8 10210 1 AE014776 346 15 28.8 10337 1 AE011691	343 15 28.8 10151 8 AF484941 344 15 28.8 10205 1 AE004830	341 15 28.8 9959 1 AE014682 342 15 28.8 10057 1 AE004871	339 15 28.8 9490 4 AF091049 340 15 28.8 9926 9 AF257305	337 15 28.8 9349 1 AF173961 338 15 28.8 9405 6 AX399934	336 15 28.8 7646 1 AF116906	334 15 28.8 6443 6 A32503 335 15 28.8 6991 B AB084921	333 15 28.8 6443 6 A07292	331 15 28.8 6441 6 AR175231	330 15 28.8 6441 6 A79570	328 15 28.8 6078 3 AB061681 329 15 28.8 6441 6 A14850	327 15 28.8 6059 6 AX281301	325 15 28.8 5962 1 MBS100PER	323 15 28.8 5694 14 HSCZCHOM 324 15 28.8 5721 6 A25910	321 15 28.8 5369 1 BPA249835 322 15 28.8 5419 3 DME238847	319 15 28.8 51/0 10 KNO426052 320 15 28.8 5334 1 BBCYAAG	318 15 28.8 5118 6 AR175232	316 15 28.8 4986 2 AC019465	314 15 28.8 4842 3 AF132179	312 15 28.8 4750 3 AF197953 313 15 28.8 4800 1 AR044751	310 15 28.8 4475 8 ZMZEMAGEN 311 15 28.8 4516 9 AB037841	309 15 28.8 4463 8 AF355592	307 15 28.8 4198 8 ATENRA	05	304 15 28.8 3963 6 AX260206	302 15 28.8 3514 3 DMSING3	00 15 28.8 2969 8 ATUS9//I 01 15 28.8 3391 1 TFALAS	99 15 28.8 2964 9 AK058012	297 15 28.8 2837 9 BC013584	95 15 28.8 2808 9 BC001843 96 15 28.8 2821 8 AF443119	94 15 28.8 2808 9 BC001655	292 15 28.8 2790 9 HSU10868 293 15 28.8 2794 8 BT004338	291 15 28.8 2790 6 AX335818	289 15 28.8 2702 9 AF203474 290 15 28.8 2790 6 AX333036	88 15 28.8 2697 9 BC044887	87 15 28.8 2693 9 RC014906

427 428 C 429 430	C 425	423	C 421 422	420	4.	C 416	415	4:	C 411	,	4.4	4 6	4 6	4 0 4 0 5 7 4	.4.	C 401	4 6	399	C 397	9	C 394	ω L	oω	90	o co	00 0	9	œœ	·	30 00	ωı	377 378	37	ω u 7 -	C 373	w	37	C 359	, n	6	36	o o	א פ ה	n on	6	9	359 8
15 15 15	155	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15 5	15	15	15	15	15	15	15	15	15	15	15	15 5	15	15	15	15	15	15	15	15	15	1 L	15	15	15	15	1 5	15	15	15	35
28. 28. 8				ω.		• 60				. 60	œ œ				8	ω.	. 80	œ :	ъ. С		°.		۰.		۰.		. 8	ωα		00.00			8	æ 0			8 :	ω.	• œ	.8		œ o	ο α	ο	8	œ :	ω.
94851 9 95521 2 96310 9	2053 3475	5167 8277	4462 4518	3925	1777	0609	2887 9422	1989	8750	8750	8750	8750	8750	3809	9580	9414	4735	4366	2498	1400	1097	0374	9160	8874	8653	8110	6804	6526	2765	1638	8600	9359	5600	4565	8282	6929	6663	6623	5573	5417	4928	4435	2780	2736	2277	2201	1855
AC004923 AC134499 AL136444 AC006902	AC01727 AL67208	AC13153 AC01581	AB023038 AC125735	NCB23L2	AC14492	AF11690	AC02275	AR17266	AR20109		AR19955	AR19302	AF210843	AC13576	AC10687	AC09102	AF45641	AP00301	MLCL622	AP00525		LMFL330	MTCY10H	LMFL327			MTCY210	MSGY42		AR20434	AC07902	AC00593	U80442	AL16249	AF14193	AE00691	AE00707	AE00566	RMU6683	AE00696	AE00467	AC01323	AEOUI /2	AE01479	AF34016	AE01225	
AC004923 Homo sapi AC1134499 Rattus no AL136444 Human DNA AC006902 Caenorbah	AC017270 Drosophil AL672088 Zebrafish	AC131532 Homo sapi AC015811 Homo sapi	AB023038 Arabidops Continuation (4 of	ABUZ304Z ARADIGODB AL356172 Neurospor	AC144927 Mus muscu	AF116907 Rhodococc	AC017882 Drosophil AC022750 Homo sapi	AR172664 Sequence	AR201097 Sequence	AR199567 Sequence	AR199551 Seguence	AR193029 Sequence	AF210843 Sorangium	AC135769 Rattus no	AC106875 Homo sapi	Eug ออา	ugu	sap hiz	Z95398 Mycobacteri	AP005254 Oryza sat	T Om	AL359781 Leishmani	ter	man	AR285078 Sequence	Z70692 Mycobacteri	Z84395 Mycobacteri	AF389112 Rhizobium AD000005 Mycobacte	AL020992 Human DNA	Z79692 R.meliloti	AC079026 Leishmani	man	U80442 Caenorhabdi	ב ב	Į,	AE006917 Mycobacte	300	7. De	ä	AE006966 Mycobacte	9	2 2 3 3 4	AEOUI720 Thermotog	AE014798 Bifidobac	ğ	9 3	nce hi
с с л 5 5 5 2 2 1 0	44	. 496 C 497	C 494	C 492 493	491		487 488		C 484		481	c 480	C 4/8		C 476	4 4	Α.	C 472	4.	C 469	C 467	C 465		C 463		<u>.</u>	c 458	C 456	٠.	4	c 452	۵.	449	44/	C 446	445	444	442	441	4	c 439		۵.		٠		C 431
15	15 15	15	15	15 15	15	55	1 L 5 G	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15 5	15	15 5	15	15	15	15	15	15	15	15	15	1 5	15	15	15	15	15	15	15	15	15	15	15	15	1 L
28.8 152081 28.8 152090 28.8 152274 28.8 152274	8 8	8 8	20 CO	8 8	8 8	8.8		8 6		8 0	. 60	8.8	ω α ω α		800	0 80	8.8	D 00		œ œ		8 8	8 . 8	œ œ	8 . 8	œ œ	8	 	8.8	. 60	8 9		8 6	0 0	8.8	8.8	800	0 00	. 6	8.8	800	ο α ο α		. 8	8.8	800	D 0
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8																					0																										
AC139631 CNS08C8Z AP004669	044819 S07EFL	018761	005010	105364 074282	S08CAV	005608	130604	132485	093610	003252	010669	037428	135014	005413	JN00054	935199	113333	090974	004888	003842	C117261	005476	006234	003808	006059	S08CCO	135918	106879	005970	098842	120402	006392	004578	71	اليار	L	۲ _۱ ۲	FLCHR32_13	١.	닝	FLCHR15 0		B7N14	162734	009210	009210	105363
AC139631 Bc AL732376 Ot AP004669 Ot	AC044 AL513	AC018 AP003	APOOS	AC105 AC074:	AL022 AL844	AP005	AC130	AP004 AC132	AC093	AP003	AC010	AC037	AP003	APO05	AL606	AL935	AC113:	AC125	APOO4	AP0031	AC11	AP005	AC006	AP003	AP006	Z9324 AL954	AC135	AC106	AC005	AC098	AC120	AP006	APO04	Conti	Conti	Cont i.	Conti	Continuat	Conti	Conti	AL160	Conti	AL669	AL162	AC009	AC009	AC103

C CC C	
15	
28.8 159991 28.8 159991 28.8 160931 28.8 160931 28.8 161601 28.8 161712 28.8 162721 28.8 162721 28.8 162721 28.8 162722 28.8 163292 28.8 163292 28.8 166160 28.8 166946 28.8 169946 28.8 169946 28.8 169951 28.8 169951 28.8 171899 28.8 171899 28.8 179189 28.8 179189 28.8 179189 28.8 179064 28.8 1819043 28.8 183439 28.8 184940 28.8 184940 28.8 184933 28.8 184940 28.8 187333 28.8 184940 28.8 187333 28.8 184940 28.8 187333 28.8 184940 28.8 187333	8.8 1528/ 8.8 1528/ 8.8 1534/ 8.8 1534/ 8.8 1539/ 8.8 1539/ 8.8 1549/ 8.8 1549/ 8.8 1559/ 8.8 1559/ 8.8 1581/ 8.8 1581/
8 ACC190156 2 ACC190199 2 ACC09199 3 ACC031498 3 ACC031281 10 ACC079638 2 ACC142104 2 ACC142104 2 ACC142104 2 ACC142104 2 ACC12268 2 ACC022613 2 ACC007668 3 ACC007668 3 ACC007668 3 ACC007668 4 ACC053514 6 ACC053514 6 ACC053514 7 ACC05	
ACC140156 Didelp ACC09819 Homos s ACC093498 Drossop ACC012281 Homos s ACC007594 Drossop ACC012281 Homos s ACC007594 Drossop ACC012266 Mus mu ACC102266 Mus mu ACC102266 Mus mu ACC007668 Drossop BNO05141 Danio ALL32387 Human ACC016781 Mus mu ACC007668 Drossop ACC007668 Drossop ACC02013 Homos s ACC007668 Drossop ACC010776 Chlamy ACC117741 Mus mu ACC053514 Homos s ACC02013 Homos s ACC02013 Homos s ACC01056 Drossop ACC016784 Homos s ACC01056 Drossop ACC01676 Drossop ACC01676 Drossop ACC01676 Drossop ACC01676 Drossop ACC01676 Homos s ACC142049 Rattus ACC19540 Rottus ACC19540 Drossop ACC02642 Homos s ACC14204 Rattus ACC131897 Cryzta ACC131897 Cryzta ACC01667 Drossop ACC02642 Homos s ACC131897 Cryzta ACC01771 Drussop ACC02642 Homos s ACC026771 Drossop ACC026771 Drossop ACC026771 Drossop ACC026771 Drossop ACC02771 Drossop ACC02771 Drossop ACC02771 Homos s ACC02771 Mus mu ACC02771 Mus mus Mus ACC02771 Mus mu	AP003566 Or AC13432 Mu AC13666 Or AC123991 Mu AL589949 Hu AL160059 Hu AC131967 Or AC1319310 Bo AC03110 Ho AP003564 Ho AC0639364 Ho
Didelphis Oryza sat Homo sapi Drosophil Homo sapi Drosophil Homo sapi Oryza sat Homo sapi Oryza sat Homo sapi B Genomic s Mus muscu Homo sapi Oryza sat Drosophil Urosophil Oryza sat Oryza sat Homo sapi Drosophil Oryza sat Homo sapi Oryza sat Drosophil Homo sapi Homo sapi Drosophil Rattus no Streptomy Oryza sat Danio rer Danio rer Ralstonia Mus muscu Danio rer Ralstonia	Oryza sat Mus muscu Oryza sat Mus muscu Human DNA Human DNA Oryza sat Bos tauru Homo sapi Oryza sat Homo sapi
C C CC	C C S S S S S S S S S S S S S S S S S S
115	
28.8 202010 28.8 203050 28.8 203050 28.8 203050 28.8 203050 28.8 204019 28.8 204019 28.8 206192 28.8 206192 28.8 213984 28.8 212990 28.8 2123326 28.8 223438 28.8 2255041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2235041 28.8 2331636 28.8 234580 28.8 234580 28.8 234580 28.8 234580 28.8 234580 28.8 2346647 28.8 2246647 28.8 2247649 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255060 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2255006 28.8 2253387 28.8 2653387	8 8 8 1 1 9 9 8 8 8 8 8 8 8 8 8 8 8 8 8
2 AC113906 2 AC139955 1 AL646078 1 AL644678 2 AC139412 2 AC139412 3 AC034593 9 AC034593 9 AC018039 8 SUBBOOOB 2 AC135111 1 BSUBBOOOB 2 AC135111 1 BC12511 2 BC135111 2 BC135111 2 BC135111 2 BC135111 3 BC137905 2 AC107905 2 AC107905 2 AC117094 2 AC117094 2 AC117094 2 AC117039 2 AC1141209 2 AC136454 2 AC136454 2 AC136454 2 AC136658 3 AE003705 3 AE003705 3 AE003705 3 AE003707 4 AC19451 2 AC136816 6 A79351 2 AC105688 6 A79351 7 AC105688 6 A79351 7 AC105688 7 AC117740 7 AC1369456 7 AC1369461 7 AC1369461 7 AC1369561 7 AC1369561 7 AC1369564 7 AC112573 7 AC112573 7 AC112573 7 AC112573	
AC113906 Rattu. AC129955 Bos t. AL646078 Ralstt. AL646078 Ralstt. AL646078 Ralstt. AC139412 Rattu. AC139412 Rattu. AC018039 Drosoj Z99111 Bacillu. AC135223 Gallu. AC135213 Hus mu Z9910 Bacillu. AC135224 Homo i AC01956 Rattu. AC12705 Rattu. AC12705 Rattu. AC12705 Rattu. AC127039 Rattu. AC127039 Rattu. AC127039 Rattu. AC136274 Rattu. AC136274 Rattu. AC136278 Rattu. AC1095215 Rattu. AC1095215 Rattu. AC1095216 Rattu. AC1095216 Rattu. AC1095216 Rattu. AC1095217 Rattu. AC1095217 Rattu. AC1095218 Rattu. AC1095218 Rattu. AC1095218 Rattu. AC1095218 Rattu. AC1095218 Rattu. AC1095218 Rattu. AC1036678 Rattu. AC10740 Drosoj AC12745 Rattu. AC136816 Rattu. AC136817 Rattu. AC136817 Rattu. AC136818 Rattu. AC136819 Mouse AC112573 Rattu. AC127791 Rattu. AC127791 Rattu.	AC1083: AF2291: AC09221: AC09221: AC1354: AF281: AF281: AF281: AL646090: BX32414 AC09044 AC09049 AL6707 AC01003
Rattus no la Rattu	17 Rattus no 99 Oryza sat 89 Oryza sat 53 Rattus no 53 Rattus no 817 Tupaia he 58 Ralstonia 68 Ralstonia 75 Danio rer 743 Mus muscu 75 Zebrafish 75 Danio rer 770 Mouse DNA 750 Drosophil

C 7114 C 7115 C 7116 C 7116 C 7117 C 7118 C 7219 C 7220	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
			155555555555555555555555555555555555555	
	. 8 349940 . 8 349619 . 8 349980 . 8 349980	8 320040 8 320040 8 320050 8 322050 8 32256 8 32256 8 32256 8 32256 8 32408 8 34408 8 34508 8	8 30343 8 30343 8 306050 8 306050 8 310020 8 310020 8 3150050 8 315362 8 315362	28.8 269203 28.8 279061 28.8 279061 28.8 277615 28.8 277615 28.8 275690 28.8 281339 28.8 285300 28.8 295500 28.8 299550 28.8 299570 28.8 299170 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029 28.8 300029
0 0				1 MLEPRTNIO 2 AC094481 2 AC123367 2 AC099659 2 AC125485 3 AE003567 3 AE003567 1 AP0050954 1 AP0050954 1 AP0050961 1 AP005025 1 AP005025 1 AP005023 1 AP005023 1 AP005023 1 AP005033
EU028291 Sequence 262336 H. sapiens C AY047594 Meriones AY032790 Passiflor AF085334 Ovis arie BD032216 Sequence S40787 luteinizing AY019862 Oryza sat AR240280 Sequence AX307534 Sequence AF016610 Unidentif AF016611 Unidentif	APRO3002 Mesorhizo APRO3002 Mesorhizo APRO02996 Mesorhizo AX492783 Sequence AX492786 Sequence AX492787 Sequence AX5923950 Sequence AX553950 Sequence AX553953 Sequence	A79350 Sequence 1 A93002 Sequence 1 BX248336 Mycobacte AC017336 Drosophil AE003843 Drosophil AP002997 Mesorhizo AC098394 Rattus no AC098394 Rattus no AP003010 Mesorhizo BX248334 Mycobacte AP003010 Mesorhizo AC018775 Rattus no AC018775 Rattus no AC018775 Rattus no	AE003538 Drossphil AL939130 Streptomy BX248341 Mycobacte AL603645 Rhizobium AP005219 Corynebac AC092883 Homo sapi AL603642 Rhizobium AE016864 Pseudomon AL603644 Rhizobium AE003442 Drosophil AE003799 Drosophil AE003799 Rattus no AC095668 Rattus no	AL583926 Mycobacte AC094881 Rattus no AC093659 Rattus no AC023367 Rattus no AC099659 Rattus no AC025485 Mus muscu AE003560 Drosophil AE003560 Drosophil AL939126 Streptomy AP005964 Bradyrhiz AP005965 Bradyrhiz AP005962 Bradyrhiz AP005962 Bradyrhiz AP005967 Oryza sat AE017067 Oryza sat AE017115 Oryza sat AE017115 Oryza sat AE016790 Pseudomon AP005921 Streptomy AP0059431 Mus muscu AP005931 Mus muscu AP005917 Rattus no
C 784 785 786 787 787 799 791 792 793 795			747 0 748 0 750 0 751 0 752 753 754 756 757	C C C C C C C C C C C C C C C C C C C
				•
90779999999999999999999999999999999999	723 729 730 758 766 779 779	651 662 693 696 700 700 701 715	593 593 594 607 6122	324 345 345 347 358 358 373 390 414 427 427 427 427 512 512 512 513 513 513 513 513 513 513 513 513 514 515 515 515 515 515 515 515 515 515
6 AX537934 6 BD148800 11 BV026717 8 AY099754 8 AY086954 8 AY179973 3 AY172973 9 HSA332150 4 AY239196 1 ECH410311 10 BC012231 8 AF462840 6 AR094305	ABO RLB/ AY26 HSA: S468 S468 DME: DME: DME: AY00 AY00	AB AF3 PCU BV HSA AY1 AY AY AY AY AY BV BV	G98148 AY182999 AY178301 AY183074 AY183076 BC0519 G85017 AY114824 BV05669 AX412732 AX505434 AX599867	1 AF016612 6 BD031435 6 BD73100074 8 AY198954 8 AF071124 11 AU026831 6 AX069894 1 AF414652 1 AF414649 1 AF417652 1 AF210725 2 AX363569 3 DME300070 3 DME300070 3 DME300070 3 DME300070 3 DME300070 4 AX472762 6 AX472762 6 AX472762 6 AX472762 6 AX494768 8 AY083989 3 DME300072 8 AY083989 3 DME300072 8 AY083989 3 DME300072 8 AY083989 3 DME300072 8 AY183070 8 AY183070
AX53 BD14 BV0, AY09 AY08 AY733 AJ33 AJ411 BC0, AF46: AR09	AB0 Z69; AY2; AJ3; S46; AJ3; BT0 AF3; AF3; AF3;	ABI U100 BVU AJ31 AY11 AY1 AY1 AY1 AY1 AY1 AY1 AY1 AY1 A	G91 AY11 AY11 AY11 AY11 AY11 AY16 BCC BCC BCC BY11 AY41 AY41 AX55 AX55	AF01 AP01 AP15 AP15 AP07 AV06 AX06 AX06 AX26 AJ30 AJ30 AX36 AX36 AX36 AX36 AX36 AX36 AX36 AX36
AXS37934 Sequence BD148800 Primer fc BV026717 S212P652 AY009754 Arabidops AY0099754 Arabidops AY172973 Mastigamc AX1172973 Mastigamc AX1332150 Homo sapi AX2339196 Cyclopes AX331916 Cyclopes AX410311 Erwinia c BC012231 Mus musc BC012231 Mus musc AF466840 Arabidops AF466840 Arabidops AF094305 Sequence	10057 Homo si 841 R. legumii 89189 Oryza i 97241 Homo si 954 neurofij 00065 Drosoj 04428 Arabid 12898 Sequen 12898 Sequen 12898 Arabid 55086 Arabid	1008682 Rattus no 39730 Arabidops 242 Pseudomonas 34458 Homo sapi 11515 Drosophil 11515 Drosophil 116891 Rattus no 160973 Mus muscu 047454 S212P6228 272227 Mus muscu 052746 Mus muscu 015274 Sus muscu	3314 8209F6348RE 3299 Trifolium 78301 Trifolium 33074 Trifolium 33076 Trifolium 351997 Mus muscu 251997 Mus muscu 254024 Arabidops 256693 S212P6030 12732 Sequence 12732 Sequence 126434 Sequence 126434 Sequence	AF016612 Unidentif BD031435 Sequence AJ300074 Drosophil AY198954 Arabidops AF071124 Zea mays AF071124 Zea mays AF071124 Sequence AF414652 Unculture AF414649 Unculture AJ271142 Drosophil AX363569 Sequence AF210725 Anopheless AJ300075 Drosophil AJ300075 Drosophil AJ300075 Drosophil AY183067 Trifolium AX472762 Sequence AX660612 Sequence AX660612 Sequence AX094768 Sequence AX094768 Drosophil AJ300076 Drosophil AJ300076 Drosophil AJ300077 Drosophil AF424687 Phytophth AF

C 862 C 862 C 863 C 8664 B667	8 8 8 8 8 8	សសសស	20000	2000	2 A A C	. <u></u>	ງ ເມ ເມ ເ	388	$\omega \omega \omega$	$^{\prime}$ $^{\prime}$ $^{\prime}$ $^{\prime}$	82	n n n	NNI			81		81	80	00	8 8 8	8 8	00	79	wυ
444444444444444444444444444444444444444	11444	11111	, , , , , , , , , , , , , , , , , , ,	114 144	444	, , , , , , , , , ,	144	144	14 14	111	14	1 1 1 4 4	14	44.	14	14 14	11.	14	14 14	14	, <u>, ,</u> ,	14	14 14	14	14
2222222 25056666666666666666666666666666																									
1836 1857 1903 1913 1922 1959 1961	1746 1746 1764 1767 1810	1715 1716 1724 1725 1725	1693	1617 1617 1617	1546	1496	1414	1410	1360 1375 1410	1347	1347 1347	1311 1323 1323	1231	1182	1161	1124 1140	1112	1093	1090	1058	1052	1022	1005 1020	984 991	970
9 ARC008877 6 AR264389 9 AK092990 9 BC028158 9 AK091772 3 LD0430863 6 BD156517 9 AK001634	4.															4							4		
,	0 GA 8 2 8		, w a a a	3 3 6 3	TRA		5 5 1 6	800	75	70 9	58	36 55	537	6 6 2	21 33	128	4 6 7	3 %)4	8	600	57	5639 58	ÿ; ≱ ₹	1A 0
AC008877 AR264389 AR092990 BC028158 AK091772 AJ430863 BD156517 AK001634	AX506758 AY142022 AY069488 M17547 AK097650	AY051709 AB009289 BC002421 AX575578 AX066613	AF034838 AX686748 AF164114 AX507943	AX154567 AX122506 BD164623	AK113531 AB021864 M28846 R	066404 Z AX405054 L42133 S	BC043981 BC008745	AR104310 AR269200	AB059657 AB086375 AR052124	AB058669 AB058670 AB058671	AB058668	AJ224325 AB021166 AV179882	AJ430637 AB038374	BD016692 AY142858	AX451933 AF268321	AF087107 AY22352	AF087106	AF240865	E33745 F AF087104	AF087100	AF483320	U66467 P	U76639 BT002868	L24501 Gl AF171855	AL15/440 AF027978
Homo sap Sequence Homo sap Homo sap Homo sap Homo sap Leishman Primer f	Sequence Arabidops Drosophil Epstein-Bar Homo sapi	Drosophil Streptomy Homo sapi Sequence Sequence	Seq Seq	Sequence Sequence Novel pol	Ciona int Caenorhab hizobium m	ea mays pl Sequence accharomyc	Xenopus 1 Homo sapi	Sequence	Gallus ga Sesbania Sequence	Coptoterm Coptoterm	Coptoterm Coptoterm	Hordeum v Gallus ga	Zea mays Trichospo	Method fo Heliobaci	Sequence Chlorarac	Compsopog 8 Human her	Comp.	Dendrolas	Compsopod	Verticill Compsopog	Goura vic	rameci	NV-2 clo Arabidop	oboder	Gallus o
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 9 2 4 9 2 2 4 2 2 4 2 2 2 2			c 914 c 915 c 916				n n n 903		0 668 U		0 893 894			C 886		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			C 877			c 871 c 872	C 869
		14 14 14	14 14 14	144	14 14	14 14 14	14 14	44	4 4 A	14 14	14	14	144	14	14 14	144	1 1 1	, سر د . هه د	14	14	144	14		144	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	. .																								
3205 3231 3231 3250 3267 3376	3123 3150 3163 3163 3163	2943 2960 3078 3078	2879 2902 2921 2924	2857 2861 2861	2814 2816 2826	2799 2814 2814	2769 2799 2799	2664	2634 2634	2509 2553 2634	2483	2332	2307	2279	2176 2254	2171	2133	2125	2107	2063 2098	2059	2045	2010	2000	1085
48196916	$\sigma_{\mathbf{P}} = \sigma_{\mathbf{P}} = \sigma_{\mathbf{P}}$	0000	₩ ₩ ₩	000	5 60 60	900	ω ω ω	9.00	9 0 0	o o a	- 6 0	nωœ	ں ب ب	u u	မ မ	90,0	ט אַ ע	יסי	9 10	σ 0	. 60	n w	o o		ם ס
PSE AKO AKO AY1 AP41	OSTI AXO AX4		0	BC0 AR0 E15	AKO AY1	AX7 AX7	2X4 1X4 1X4	AFO AX6	AX4 BD0	AFO ARO	AOP ABO		O HSA	AF1	AK0	BB1	S AS	AX6	288	AX1	AKO	DRO	AKO	HSM BX6	AX2
	OSTMK AX082312 AX405058 AX405051 AX405051	AF251294 REU279073 BD012338 BD0158487 AK077770	SCYDL234C 0 RATLHHCG AY179881 DMY14171		AK056120 AY179883 BC045321	BD107372 AX714057 AK000685	AX151623 AX356915 AX356916	AF026039 AX653038	AX469425 BD080289 AK026796	AF085063 AK091508 AR072900	AOP250266 AB084154	SCGYP7 TRBNRKAI	SCUSIZ/93 HSAJ6470 0 RATLHHCG01	AF190556 AK112563	AK024001 AY058407	GBI302036 BD160313	0 MMU278575	AX647819	BC023820	BC048985 AX154565	AK057133	DRONOTO1	AK075401 AX224806	AX656614 HSM805524	30
AX400031 Sequence PSEACCBC L14612 Pseudomonas AK095391 AX40555 Homo sapi AX405056 Sequence AX188947 AX188947 Homo sapi AF406639 AF406639 Rhodopseu AB086374 AB086374 Sesbania	OSTMK AX082312 AX405058 AX405051 AX405051	AF251294 REU279073 BD012338 BD0158487 AK077770	SCYDL234C 0 RATLHHCG AY179881 DMY14171			0, 4,10	0, 0, 0				- 66	SCGYP7 TRBNRKAI	HSAJ6470 RATLHHCG01				MMU278575		BC023820 BC030591						102

protein from

Law, J.H.

```
RESULT 1
CIU39835
LOCUS
      ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                              DEFINITION
                                                                                                                                                                                                                             976
977
978
979
980
981
982
983
985
985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 973
974
975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COCCIDIO immitis immunoreactive
      Coccidioides posadasii
                                    U39835.1
                                                                complete
                                                                                                                                                                                                            GI:1161373
                                                                                                                                                                                                            334652
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
35500
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
35500
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
355000
35000
355000
355000
355000
355000
355000
355000
355000
355000
35500
                                                                                                                                                                                                                                            169969661
                                                                                                                                                                                                                                                                                                                                                                              16661
                                                                                                                                                                                                                                                                                                                                                                                                                                             HS1UL2
AE005715
AX078430
AX305572
MMNFMG
                                                                                                                                                                                                                                                                                                                              SAMY18862
PMO271595
AX345097
BD084814
                                                                                                                                                                                                                                                                                   HSNFM
AX098213
AB002346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AR308841
AF072683
HSM805174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AR206876
AR308837
AX367076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSU65785
BC033494
GGLR11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATH510210
AY051813
D87440
BC015052
AX399923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AB072376
AC019447
AF514281
                                                                                                                                                                                                                                                                                                                                                                                          AX319625
AX406977
                                                                                                                                                                                                                                                                                                                                                                                                                      BBJ224435
AR308836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AR308838
AY037893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BD140451
AY152396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AX195972
AX574106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AR206497
AX147254
                                                                                                                                                                                                            HSM802436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVIHUPZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF126720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AK074112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF145671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AF064563
                                                                                                                                                                                                                                                                       AF039945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AY121618
                                                                                                                                                                   ALIGNMENTS
                                                                                            mRNA
                                                                        nRNA linear PLN 18-
cell wall protein mRNA,
                                                                                                                                                                                                                                                                                                                                                                      AJ224435 Bifidobac
AR30836 Sequence
AX319625 Sequence
AX406977 Sequence
Y18862 Streptomyce
                                                                                                                                                                                                                                                                                                                                                                                                                                           M19120 Herpes simp
AE005715 Caulobact
AX078430 Sequence
AX305572 Sequence
X05640 Mouse NF-M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR308838 Sequence
AY03793 Phytophth
AY121618 Drosophil
AJ510210 Arabidops
AY051813 Drosophil
D87440 Human mRNA
BC015052 Homo sapi
AX399923 Sequence
AK07411 Homo sapi
AR7126720 Mycobacte
AR072702 Sequence
E15695 Human mRNA
U65785 Human 150 k
BC033494 Homo sapi
Y08109 G.ygallus mR
AR206876 Sequence
AR308837 Sequence
AR307876 Sequence
AR308837 Sequence
AR308841 Sequence
                                                                                                                                                                                                        I64799 Sequence 5
X99339 B.subtilis
AF318616 Homo sapi
AL157424 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AB091437
AX195972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY152396 Homo sapi
AF064563 Hordeum v
AF145671 Drosophil
                                                                                                                                                                                                                                                                AB002346 Homo sapi
AF039945 Homo sapi
                                                                                                                                                                                                                                                                                                             BD084814 Diagnosis
Y00067 Human gene
                                                                                                                                                                                                                                                                                                                                                          AJ271595 Poinsetti
                                                                                          PLN 18-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
Burkholde
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Secreted
                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
CIU32518
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                 JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                              152
                                                                                                                                                                                       Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eu Onygenales; mitosporic Onygenales; Coccidioides. 1 (bases 1 to 1234)
Zhu,Y., Yang,C., Magee,D.M. and Cox,R.A.
Molecular cloning and characterization of Coccid antigen 2 cDNA
Infect. Immun. 64 (7), 2695-2699 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cloning and sequence analysis of the cDNA for a protei Coccidioides immitis with immunogenic potential Biochem. Biophys. Res. Commun. 218 (2), 485-489 (1996) 96144702
                                                                                                                                                                                                                                                                                                                                                       1234
Coccidioides immitis antigen
U32518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 1201)
Dugger, K.O. and Galgiani, J.N
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomyce
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 1201)
Dugger, K.O., Villareal, K.M., Ngyuen, A., Zimmermann, C.R., and Galgiani, J.N.
                                                          8
                                                                                    Submitted (27-JUL-1995) Texas (Research Immunology, 2303 S.E.
                                                                                                                                                                                                                                                                                            Coccidioides posadasii
Coccidioides posadasii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (01-NOV-1995) Kris O. Dugger, Infectious Diseases, University of Arizona, 1501 N. Campbell, Tucson, AZ 85724, USA
                                                                                                                                 Cox, R.A.
                                                                                                                                                              8698497
                                                                                                                                                                                                                                                                                                                                          U32518.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                University of Arizona, 1501 t
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8561782
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                               (bases 1 to 1234)
                                                          Feb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
llarity 100.0%;
Conservative C
                           USA
24, 1996 this sequence
Location/Qualifiers
                                                                                                                   Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ىرو
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="immunoreactive spherule cell wall protein"
/protein_id="AAC49140.1"
/db_xref="Gi:1161374"
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/protein="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/protein="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/protein="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTPTAAPE
PSETABPTAEPTAEPTAEPTAEPTAEPTAEPTAEPTAFTAGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"

3 69 c 275 g 308 t
/organism="Coccidioides
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                          GI:1200179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Coccidioides posadasii"
/mol_type="mRNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="33 kDa apoglycoprotein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _xref="taxon:199306"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 52; DB 8; Pred. No. 2.7e-17; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                      bp mRNA
2 (Ag2) mRNA,
                                                                                    Center for Infectious Disease, Military Drive, San Antonio,
                                                        version replaced gi:1184058
                                                                                                                                                                                                                       of Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1201;
                                                                                                                                                                                                                                                                                                                                                                    linear
complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                              Eurotiomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eurotiomycetes;
```

იი

იიი

C

PLN cds.

04-NOV-1996

×

0

Gaps

0

203

0000

ററ O იი 000000

റ റ

000000

იი

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
CIU51200
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                     SdC
                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 175
                                                                                                                                                                                                                                                                                                                 Submitted (12-MAR-1996) Rebecca A. Cox, Clinical Investigation, Texas Center for Infectious Disease, 2303 S.E. Millitary Dr., S Antonio, TX 78223, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 1435)
Zhu,Y., Yang,C., Magee,D.M. and Cox,R.A.
Coccidioides immitis antigen 2: analysis of gene and protein
Gene 181 (1-2), 121-125 (1996)
97128779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                         Zhu,Y., Yang,C., N
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CIU51200 1435
Coccidioides immitis antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Coccidioides posadasii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U51200.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U51200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 226
                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 1435)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                             /product="antigen 2"
/product="antigen 2"
/product="antigen 2"
/protein_id="AAC49612.1"
/db_xref="070;1256444"
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
DFKCHCSKPELLEGOITPCVEEACFLDARISVSNIVVDQCSKAGVPIDIPPCTTAAPE
PSETTAEPTAEPTEEPTAEPTAEPTAEPTEEPTAVPTGGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="antigen 2"
/proteain_id="AAB18148.1"
/proteain_id="AAB18148.1"
/db_xref="GI-1200180"
/translation="MOFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
DFKCHCSKPELPGQITPCVEEACPLDAXISVSNIVVDQCSKAGVPIDIPPVDTTAAPE
PSETAEPTAEPTAEPTAEPTAEPTHEPTEEPTAVPTGTGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="major T-cell-reactive component
spherule cell walls"
/codon_start=1
                                                                                                                                                             /db_xref="taxon:199306"
join(175. .255,334. .472,575.
/codon_start=1
                                                                                                                                                                                                                     /organism="Coccidioides
/mol_type="genomic DNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="Ag2"
/note="21 A nucleotides"
383 c 277 g 322 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /strain="Silveira"
/db xref="taxon:199306"
/cell_type="spherule"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:1256443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Ag2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="Ag2"
L75. .759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                           ., Magee, D.M. and Cox, R.A.
               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 52; DB 8;
Pred. No. 2.7e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <sup>ည</sup>ှာ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
             361 t
                                                                                                                                                                                                                                                        posadasii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of mycelia and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 14-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

ş

```
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                       RESULT 5
AE004517/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
AF013256
                                                                                                                   밁
                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
   ACCESSION
                              DEFINITION
                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                             FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rocus
                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 52; Conservative (
                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                         Sas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                     Local
                                                                                                                  968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Coccidioides posadasii
Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĀE004517 AE004091
                           Pseudomonas aeruginosa
                                                                                                                                                                        Similarity
52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (09-JUL-1997) Infectious Disease; University of Arizona, 1501 N. Campbell, Tucson, AZ 85724, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peng,T., Orsborn,K.I., Orbach,M.J. and Galgiani,J.N.
Proline-rich vaccine candidate antigen of Coccidioides immitis:
conservation among isolates and differential expression with
spherule maturation
J. Infect. Dis. 179 (2), 518-521 (1999)
                                          AE004517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peng, T., Orsborn, K.I., Orbach, M.J. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Onygenales; mitosporic Onygenales; 1 (bases 1 to 3821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF013256 3821 Coccidioides immitis proline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99094977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF013256.1 GI:2331288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9878042
                                                                                                             ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 3821)
                                                                                                                                                                                                                                              924
                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                      /product="proline rich antigen"
/protein_id="AAB66894.1"
/db_xref="GI:2331289"
/translation="MOFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
DFKCHCSKPELPGQITPCVEEACPLDARISVENIVVDQCSKAGVPIDIPPVDTTAAPE
PSETAEPTAEPTAEPTAEPTAEPTAEPTHEPTEEPTAVPTGTGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                join(737. .976,1055. .1193,1296.
/gene="PRA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Coccidioides
/mol_type="genomic DNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                                                                                                          /note="antigen 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:199306"
737. .2126
                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                         gene="PRA"
                                                                                                                                                                                                                                                                                                                                                                                                      product="proline rich antigen"
|oin(896. .976,1055. .1193,1296.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="PRA"
                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                              981 c
                                                                                                                                                                        0
                                                                                                                                                                                                                                        903 g
                           10822
PAO1,
                                                                                                                                                                                    Score 52; DB 8; 1
Pred. No. 2.6e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 52; DB 8; | Pred. No. 2.7e-17;
                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                           section DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rich
                                                                                                                                                                                                                                             1013 €
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     posadasii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen
                                          DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and Galgiani,J.N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                           78
                         linear
of 529 of
                                                                                                                                                                                                Length 3821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1435;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   .2126)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear PLN 22-AUG-2000 (PRA) gene, complete cds.
                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eurotiomycetes;
                         BCT 19-FEB-2003
the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLN 22-AUG-2000
                                                                                                                                                                     <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>.</u>.
                                                                                                                947
                                                                                                                                          52
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

previously reported gesimilarity to any previously reported gesimilarity to any previced new form of the following start=1 /transl_table=11 /produci "hypothetical /protein id="AAG04210 /db_xref="G::9946715" /translation="NEOPFDLE /franslation="NEOPFDLE /FKKAHTPLVRESLCQCFDEFE MDEDDHLSFCYTSGKKSRDAGF DFLOLFIDFARRLEPEGGYAGE DFLOLFIDFARRLEPEGGYAGE DFLOLFIDFARRLEPEGGYAGE TPEFKPTRIKTVSWLTTLINNER YIAGDAEDSRPAPYULINHALM DSEIFRWCDKLLSAEBYLDATM Complement (3569 . 4015 /locus_tag="pa06822"	g ene	Location/ 1. 10822 /organism /mol_type /mol_type /strain=" /db_xref= 81506 /locus_ta 81506 /locus_ta /note="pri /structura experimen /codon_st	FEATURES SOURCE SOURCE Gene CDS
/protein_id="AAG04209 /db_xref="Gi:9946714" /translation="MPAVIAE /translation="MPAVIAE /translation="MPAVIAE /translation="MPAVIAE /translation="MPAVIAE /translation="MPAVIAE /translation="MPAVIAE /translation="Paviae /note="Protein name co	gene	idence, otein na experime of highl in anot pathways proposed structur mentally cof previrity to	
15452357 /locus_tag="PA0820" 15452357 /locus_tag="PA0820" /note="Protein name of previously reported grainlarity to any previously table=11 /transf_table=11 /product="hypothetical	gene CDS	Biochemistry, Simon Fraser University, 8888 University Dr., Burnaby, British Columbia V5A 156, Canada This represents the February 3, 2003 version of the continually updated, reviewed, Pseudomonas aeruginosa PAO1 genome annotation, from PseudoCAP (see http://www.pseudomonas.com for latest updates and links to alternate annotations). PseudoCAP is coordinated by Fiona S.L. Brinkman (Simon Fraser University, Canada) and Robert E.W. Hancock (University of British Columbia, Canada) We welcome submission through www.pseudomonas.com of any proposed changes.	COMMENT
previously reported g similarity to any previously reported g similarity to any previously reported /codon start=1 /transI_table=11 /product="hypothetica /protein_id="AAG04208 /brotein_id="AAG04208 /db_xref="G1:9946713" /translation="MAPCPGK" DLFDTARTRLESAIGTISVLID		Direct Submission Submitted (16-MAY-2000) Department of Medicine and Genetics, University of Washington Genome Center, University Of Washington, Box 352145, Seattle, WA 98195, USA 3 (bases 1 to 10822) Pseudomonas aeruginosa Community Annotation Project (PseudoCAP) Direct Submission Submitted (04-FEB-2003) Department of Molecular Biology and	TITLE JOURNAL REFERENCE AUTHORS CCNSRTM TITLE JOURNAL
X P N O 0	gene CDS	AL Nature 406 (6799), 959-964 (2000) NE 20437337 ED 1094043 CE 2 (bases 1 to 10822) CE 3 (bases 1, Brinkman, F.S.L., Hufnagle, W.O., Kowalik, D.J., Hickey, M.J., Brinkman, F.S.L., Hufnagle, W.O., Kowalik, D.J., Lagrou, M., Garber, R.L., Goltry, L., Tolentino, E., Westbrock-Wadman, S., Yuan, Y., Brody, L.L., Coulter, S.N., Folger, K.R., Kas, A., Larbig, K., Lim, R.M., Smith, K.A., Spencer, D.H., Wong, G.KS., Wu, Z., Paulsen, I.T., Reizer, J., Saier, M.H., Hancock, R.E.W., Lory, S. and Olson, M.Y.	JOURNAL MEDLINE PUEMED REFERENCE AUTHORS
/transl_table=11 /product="probable ri: /protein_id="AAG04206 /db_xref="GI:9946711" /transl_tion="MSLMPFH /transl_tion="MSLMPFH HQLVIHQHPQTDSQRHAGSNP PYIRFKQQVGEQATLFILPDPC complement(525797) /locus_tag="PA0818" /note="Protein_name_c, previously reported g gimilarity to any pre-	gene	AE004517.1 GI:9946710 Pseudomonas aeruginosa PAO1 Pseudomonas aeruginosa PAO1 Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales; Pseudomonadaceae; Pseudomonas. 1 (bases 1 to 10822) Stover,C.K., Pham,XQ.T., Erwin,A.L., Mizoguchi,S.D., Warrener,P., Hickey,M.J., Brinkman,F.S.L., Hufnagle,W.O., Kowalik,D.J., Lagrou,M., Garber,R.L., Goltry,L., Tolentino,E., Westbrock-Wadman,S., Yuan,Y., Brody,L.L., Coulter,S.N., Folger,K.R., Kas,A., Larbig,K., Lim,R.M., Smith,K.A., Spencer,D.H., Wong,G.KS., Wu,Z. and Paulsen,I.T. Complete genome sequence of Pseudomonas aeruginosa PAO1, an	VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS

```
PFDLAAELAKOPHLLEIAGNLLMKSGPEDYIGAVLCLRGTL
FDBFERLAEPHLTMLWREEPAOGKPLTAYRDTOPLREWMGA
RDAGAMLFDIYGKRSWOAKMGHDLSVLEFSVPLLYQEGOPL
GYAGHAYNLSPTSWDNDEPSEAFMAARMPGLDVGTACLLAN
LUNERLALAGGLDALRAQLPSSHFAFYRYGDGVVIQAGAYP
NHALKGIRYETIGSLHGGSHDGELRLVGWAADQWLKRLDVE
LDATNTLPERL"
                                                                                                                                                                                                                                                                                                 confidence: Class 4 (homologs of genes of unknown function, or no reviously reported sequences)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AENDVSIWDDETGAVYHYPRRYSAILKPGVQVVYYKGKL
RAIGKVYPDPESSKGDLFALIESFQPFEQAVLAKEGNSY
IGQVITFDSILARAEIKPLOVAESWGDRALGGFESRTEGS
IAIHGVACKACGFDFGKAYGEYAKGFIHVHTQPISEFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               confidence: Class 4 (homologs genes of unknown function, or reviously reported sequences)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         confidence: Class 4 (homologs of genes of unknown function, or no reviously reported sequences)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     confidence: Class 4 (homologs of genes of unknown function, or no reviously reported sequences) "
                                                                                                                                                                                                             al protein"
                                                                                                                                                                                                                                                                                                                                                                                                  52)
                                                                                                                                                                                                                                                                                                                                                                                                                                                52)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eal protein"
)9.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    al protein"
08.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 al protein"
)7.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'HLAIPVHDLPAARRFYGEVFGLSEGRSAEHWVDFDFFG
IPVDGHDVPVPHFGVVLAWDDWHALAERLOORGTRFVIE
'CGNALEFKSFRDMGOLFAK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'ing-cleaving dioxygenase"
|6.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KTVTAQSPSTFIPLRRTSQCNQHPGCATLYLDCSAASE
DLLDETEEPGESTCRITGSLLSLFEAEYARRHR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LLILALTPALASSATLDERLGDLEHAFKPDLDGTTSAK KECATSSLPDEQSSCAALEFCTDCAQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 of
```

```
RESULT 6
AE012448/c
LOCUS
                                                                                                  SOURCE
ORGANISM
               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                           /ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                       8361 CTCGTCGCTGCCGGCCTCGC 8342
                                                                                                                                                            Xanthomonas campestris pv. campestris of 460 of the complete genome.
AE012448 AE008922
AE012448.1 GI:21114551
               Xanthomonadaceae; Xanthomonas.

1 (bases 1 to 1317)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20;
                                                                                         Xanthomonas campestris pv. campestris str. ATCC 33913 Xanthomonas campestris pv. campestris str. ATCC 33913
                                                                Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCGTCGCTGCCGGCCTCGC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (4267. .4785)

/locus_tags="PA0824"
complement (4267. .4785)
/locus_tags="PA0824"
/locus_tags="PA0824"
/notes="Protein name confidence: Class 4 (homologs of previously reported genes of unknown function, or no similarity to any previously reported sequences)"
/codon_start=1
/cransI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..ucus_tag="PA0823"
complement(4037. .4270)
/locus tag="PA0823"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (4959. .5294)
/locus tag="PA0825"
/note="Protein name confidence: Class 4 (homologs of previously reported genes of unknown function, or no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MSDQPSLSRGGMSPEGRTNPVGTLEPRLDPQDKKVLCSAVCHCS STPNLSQDGKSLKQACVAQRLGELDEVLQGRSP" complement (4267. . 4785)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (3569. .4015)
/locus tag="PA0822"
/note="Protein name confidence: Class 4 (homologs of previously reported genes of unknown function, or no similarity to any previously reported sequences)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    similarity to any previously reported sequences) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /trānsīation="msgkpaarvtdpttcpvpghgsnpivqgspdvvfdglpaarqgd
asacgspmisavsstvlinglpavtlgsigahgnvviggsgtvligdvftpaprapal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Protein name confidence: Class 4 (homologs of previously reported genes of unknown function, or no similarity to any previously reported sequences)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="mTKNPPQPILDSQTGNSPHGWIPGWISKYWDEDDEHPPFKPGKG
MIRRPDVIIVQNPNRPPTQDNIKQVVEMKFPPDPHNREQLEDYAAIAGNKNKIVEMKP
SDCDCGQENQRSKVPVEQAGWAVAIAGGVMFVLTRGRSPRPMIPAY"
complement(4037...4270)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (4959.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLNRNSVPCSGRFQLIDHETGKPVAGRRVRVWSSGGWNAFDTTDADGMTSWIERPTAE
ILYIDLVQRCDA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
/product="hypothetical protein"
/protein id="AAC04213.1"
/db_xref="GI:9946718"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="PA0825"
complement(4050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="hypothetical protein"
/protein_id="AAG04212.1"
/db_xref="GI:9946717"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="hypothetical protein"
/protein_id="AAG04211.1"
/db_xref="GI:9946716"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tag="PA0823"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  %; Score 20; DB
%; Pred. No. 3.4
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; Length 10822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3.4;
                                                                                                                                                                                                                                                                           str.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                     linear BCT
ATCC 33913,
                                                                                                                                                                                                                                                                                                BCT
                                                                                                                                                                                                                                                                     section 356
                                                                                                                                                                                                                                                                                                23-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CE 2 (bases 1 to 13170)

CE 2 (bases 1 to 13170)

CR 3 Silva,A.C.R., Ferro,J.A., Reinach,F.C., Farah,C.S., Furlan,L.R.,

Quaggio,R.B., Monteiro-Vitorello,C.B., Van Sluys,M.A., Almeida

Jr.,N.F., Alves,L.M.C., do Amaral,A.M., Bertolini,M.C.,

Chambergo,L.E.A., Camarotte,G., Cannavan,F., Cardozo,J.,

Chambergo,F., Ciapina,L.P., Cicarelli,R.M.B., Coutinho,L.L.,

Cursino-Santos,J.R., El-Dorry,H., Faria,J.B., Ferreira,A.J.S.,

Ferreira,R.C.C., Ferro,M.I.T., Formighieri,E.F., Franco,M.C.,

Greggio,C.C., Gruber,A., Katsuyama,A.M., Kishi,L.T., Leite

Jr.,R.P., Lemos,B.G.M., Lemos,M.V.F., Locali,E.C., Machado,M.A.,

Madeira,A.M.B.N., Martinez-Rossi,N.M., Martins,E.C., Meidanis,J.,

Menck,C.F.M., Miyaki,C.Y., Moon,D.H., Moreira,L.M., Novo,M.T.M.,

Okura,V.K., Oliveira,M.C., Oliveira,V.R., Pereira Jr.,H.A.,

Rossi,A., Sena,J.A.D., Silva,C., de Souza,R.F., Spinola,L.A.F.,

Takita,M.A., Tamura,R.E., Texeira,E.C., Tezza,R.I.D., Trindade dos

Santos,M., Truffi,D., Tsai,S.M., White,F.F., Setubal,J.C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A Silva, A.C.R., Ferro, J.A., Reinach, F.C., Farah, C.S., Furlan, L.R., Quaggio, R.B., Monteiro-Vitorello, C.B., Van Sluys, M.A., Almeida Jr., N.F., Alves, L.M.C., do Amaral, A.M., Bertolini, M.C., Camargo, L.E.A., Camarotte, G., Cannavan, F., Cardozo, J., Chambergo, F., Ciapina, L.P., Cicarelli, R.M.B., Coutinho, L.L., Chrisino-Santos, J.R., El-Dorry, H., Faria, J.B., Ferreira, A.J.S., Ferreira, R.C.C., Ferro, M.I.T., Formighieri, E.F., Franco, M.C., Greggio, C.C., Gruber, A., Katsuyama, A.M., Kishi, L.T., Leite Jr., R.P., Lemos, E.G.M., Lemos, M.V.F., Locali, E.C., Machado, M.A., Madeira, A.M.B.N., Martinez-Rossi, N.V.F., Locali, E.C., Machado, M.A., Menck, C.F.M., Miyaki, C.Y., Moon, D.H., Moreira, L.M., Novo, M.T.M., Okura, V.K., Oliveira, M.C., Oliveira, V.R., Pereira Jr., H.A., Rossi, A., Sena, J.A.D., Silva, C., de Souza, R.F., Spinola, L.A.F., Rossi, A., Sena, J.A.D., Silva, C., de Souza, R.F., Spinola, L.A.F., Takita, M.A., Tamura, R.E., Teixeira, E.C., Tezza, R.I.D., Trindade dos Santos, M., Truffi, D., Tsai, S.M., White, F.F., Setubal, J.C. and Kitajima, J.P. Comparison of the genomes of two Xanthomonas pathogens with differing host specificities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (28-NOV-2001) Departmento
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kitajima, J.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12024217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nitted (28-NOV-2001) Departmento de Bioquimica, Paulo, Av. Prof. Lineu Prestes 748, Sao Paulo,
                                                                                                                                                                                                                   /product="hypothetical protein"
/protein id="AAM42578.1"
/db_xref="GI:ALM42578.1"
/db_xref="GI:ALH4552"
/translation="MSLTSQQYAALAKDAYDEPPETGASSRPVDIGGITYKRLEYVDS
PSGYQGIIYQRIDTNBIIVAHRGTETERELKQDGVYTDGGMVAARHNRQAAEAIELTK
HALVYAQKLGKDGETLDVAVTGHSLSGNLAQVTAHHFSLKGETFNAYGAVSLDRRIPE
GGTDVINHYWAGDAVSAASGHYGQVYLYATQQEIATLEKAGYDNTRSYLDVRNPIVAK
                                                                                                                                    KLGDSHRMHNFLPEDANGKPDRSVLEDPKAQQLAHKFAPMIDKYRDDVEVLRGSVTLG
VRGNYGLADDGIDALRGTLAPGAGSAEMAAARWQEVQQRIQNDHAPTYVAPGWKMPIV
TSGSEVAAPWAPPGRFGEPASASVPNDPLYQAIHSKLPAGTSPAEAMYATVEAKKAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="putative; ORF located using Glimmer/Genemark"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                        /gene="XCC3309"
                                                                                                           LRADQLQSVTSHQDNVWIVGQTPGFRVKVDLSDSVPPLQESIRQSQALDTQRSQPEVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="XCC3308"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="XCC3308"
118. .1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/strain="ATCC 33913"
/db_xref="ATCC:33913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note="pathovar: campestris"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           db_xref="taxon:190485"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Xanthomonas campestris pv. campestris str. ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Universidade de SP 05508-900,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Furlan, L.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dos
```

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="mlehyglmlalgcavlaivygmlsarwvvaqpsgnarmqeiaaa

IQEGARAYLNRQYLTISIAGVVLFVLVGLFLSWYTAIGFAIGAVLSGLAGYIGMVVSV

RANVRTAQAARHGISKAMDVAFRGGAITGKUVLGLLGVAGYFAILQAMGLPLEQNL

HALVGLAFGSSLISIFARLGGGIFTKGADVGADLVGKVEAGIPEDDFRNPAVIADNVG

DNVGDCAGMAADLFETYAVTVIATMLLGSLTLAETGPHAVLYPLVLGGYSIVASIIGA

AFVKVKPGGSIMGALYKGVIVSGVLAAIAYLFITQALMRENAHGAMSLYACALIGLVL

TGLIVMITEYYTGTQYGFVQHVAAASTTGALGISMAGLAFBATALFVIAVCAAIMG

AFHFGGLYGIAIAAATAMLSMAGMIVALDAYGFTTDNAGGIAEMAELPPEKRNVTDPLD

AVGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGSAALAALVLFADYTHNLQAANPNEVFAFDLSDHTVIIGLLIG

AUGNTTKAVTKGYAIGHAGAAVEEURRGFRDIFGIIFGTAKFQYDRAVDMLTRSAIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (2963. .3469)
/gene="XCC3311"
/note="putative; ORF located
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MHGANVAQRGLPPACHAAFSGLKMVFNANGAGAFLEKPMKVLRH
SPGLLAVFALMHPVPARAASMVVDDAGVTPRGGCOLEAWWRATPGGASATAVPACNL
WGTEFALGMTDVRHGSALDIGAKRMLADFBGHAWGLAVSVGLQRAWDEPQQRASYIA
WFLTWSLGTAANTRIHVNFGALVTHAGPDTTTAGVGLEHVLTPAWTVLAEASGDDRDG
                                                                                                                                                                                                                                                    complement (6144. .6626)
/gene="XCC3313"
                                                                                                                                                                                                                                                                                                                                                                                                                   EMIVPSLLPVVVPVIVGLLLGPRALGGLLIGTIVTGLFVAISMTTGGGAWDNAKKYIE
DGHFGGKGSEAHKAAITGDTVGDPYKDTAGPAINPLIKIINIVALLLVPLL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="XCC3312"
3719. .5746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(2963. .3469)
/gene="XCC3311"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="XCC3310"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement (1861. .2646)
/gene="XCC3310"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MIERVAPMTAPVPTVTAARCPPRATSRLQPLADANLGDFVFFKL
VNDYFNREIQDFGMALMERAMRWVSTIALTVTTLWVMILGYRIATGQSRESAMATMIK
                                                                                                                                                                                                                                                                                                                                        complement (6144, .6626)
/gene="XCC3313"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TMEGRACO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transT_table=11
/product="conserved hypothetical protein"
/protein_id="AAM/2581.1"
/protein_id="AAM/2581.1"
/db xref="GI:21114555"
/translation="MLKSALMMTGLLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/protein_id="MLKSALMMTGLLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/protein_id="MLKSALMMTGLLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ"
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ"
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPGTAQAIGAAHTLRQ"
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPGTAQAIGAAHTLRQ"
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPFAAEPAPEMQRAPGTAQAIGAAHTLRQ"
/translation="MLKSALMMTGLLSAPVFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPEMQRAPFAAEPAPAPEMQRAPFAAEPAPAPEMQRAPFAAEPAPAPEMQRAPFAAEPAPAPEMQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGAQLGLRRLVGKASSIDLVVGRDHATAPRGWITVGINIAMAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGKVAIIISISCESCRS"
/product="conserved hypothetical protein"
/protein_id="AAM42583.1"
/db_xref="GI:21114557"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="H+ translocating pyrophosphate synthase"
/protein_id="AAM42582.1"
/db_xref="GI:21114556"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VPSASCPSQQAVVRVWRKPAAAKPQLDGQGQSRIYLEEAKQQAAAGKIPQVPMFTAQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="conserved hypothetical
/protein_id="AAM42580.1"
/db_xref="GI:21114554"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="hypothetical
/protein_id="AAM42579.1
/db_xref="GI:21114553"
                                                                                                                                                                                                            note="putative; ORF located using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="XCC3312"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="identified by sequence similarity; putative; located using Blastx/Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'gene="XCC3309"
note="putative; ORF located using Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="identified by sequence similarity;
ocated using Blastx/Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _table=11
                                                                                                                            _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    al protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     using Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein"
                                                                                                                                                                                                                Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             putative;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
AF416330/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 19
                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
```

```
TCTCGTCGCTGCCGGCCTC
                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="response regulator"
/protein_id="AAM42585.1"
/db_xref="GI:21114559"
/translation="MRILFVGDEASLPSDLVDYIAELGDNWQAQQVPDGNSAIEAAAL
/translation="MRILFVGDEASLPSDLVDYIAELGDNWQAQQVPDGNSAIEAAAL
SPEDANIVAPVLPDLTAATLLCQIRTLRAPDTIRIALIDAQDGQRTPPARIIGVAHRFL
DNN DETWITTERSTELLCQIRTLRAPDTIRIALIDAQDGQRTPPARIIGVAHRFL
DNN DETWITTERSTELLCQIRTLRAPDTIRIALIDAQDGQRTPPARIIGVAHRFL
                                                                                                                                                                                                                                                                                                                                                                                                                        PMPLAPEVLLEAVTSLEELRDLLSNPRLRAAIGRIEKLPSPPHLYLSLMHALEEDDGA
DAADIAKLIAGDPAIAAKVLQLCNSAFFSGGRSITDLKTAVTRLGVATLRDLVLASEV
FSVQTLSPAERAAMQRRALLSSRLAAKVLPPTSAELGSTAALLADIGLLLPGVRDERE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="mSRYLRVIVLLMSSILAPAALAADPPPAFVDAVDWPANGEGWEA
FVDLEQRLDRDFDNICGDTFCGGEFSDYQPLRFRCSVNRVSGVVRSCIWTFGASEVSV
DPRSGHLRSDSRVWRCTAPLKAGTRLDEMYRVLAVTNPLFEPLPGGAPPIYNGLIGCL
                                                                                                                                                                                                                                                 /note="synonym: XCC3316"
complement(9251. .12142)
                                                                                                                                                                                                                                                                                                                                        complement (9251. .12142)
                                                                                                                                                                                                                                                                                                                                                                PPVEGDERLGHTEAGAYLLGLWGLPMPIIEAVAFHRHPORSSLRSFWVTGAVHVATAL
ASGETVDEEYLTKYGVINRLPNWREQADTLMGLAEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="XCC3315"
7509. .8621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EAKRILVESVERYNSDAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="inorganic pyrophosphatase"
/protein id="AAM42584.1"
/db_xref="GI:21114558"
/tanslation="MGLELVTSGKNLPEEINVVIEIPKDSEPVKYEVDKASGAIFVDR
ILSTPMRYPCNYGYVPNTLCGDGDPADVLVVLPLPLVPGSVVRCRPVGVLRMSDEAGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7509. .0621
/gene="XCC3315"
/note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEKILAVPIEKIFSGYAHIEDIDQVSSHWMERIGHFFEHYKDLEKGKWVKLDGWGGAA
                                                                                                                                                                                                                         /gene="btuB"
                                                                                                                                                                                                                                                                                                             gene="btuB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="identified by sequence similarity;
located using Blastx/Glimmer/Genemark"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=
transl_table
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'gene="ppa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="synonym: XCC3314"
                                                                                                                                         100.0%;
                                                                                                                                                                 36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _table=11
                                                                                                           0
                                                                                                                                      Score 19; pred. No.
7120
                                                     45
                                                                                                           Mismatches
                                                                                                                                                                 DB 1;
                                                                                                           ..
                                                                                                                                                                 Length 13170;
                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             putative;
                                                                                                           <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORF
                                                                                                           0
```

AF416330

AF416330

DEFINITION Ruegeria sp. PR1b plasmid pSD20, complete sequence.

ACCESSION AF416330.

VERSION AF416330.1 GI:22726324

KEYWORDS

SOURCE Ruegeria sp. PR1b

ORGANISM Ruegeria sp. PR1b

Bacteria; Proteobacteria; Alphaproteobacteria; Rhodobacteraceae; Ruegeria.

REFERENCE 1 (bases 1 to 76093)

AUTHORS
Shea,T. p., Wilkinson,J.E., DeLoughery,C. and Toukdarian,A.

Nucleotide sequence based characterizations of two cryptic plasmids from the marine bacterium Ruegeria isolate PR1b

AUTHORS Zhong,Z., Toukdarian,A. and Helinski,D.R.

TITLE Direct Submission

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                 Sas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (31-AUG-2001) Department of Biology, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0322,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                            /transI rat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LAMSAALDGYKVLVIDLDSQGSMTSIFGGKVEDEWQTAFPLMARHYGEHLRLENQRRL
DRGDAFQPLDESITAAWEMTAQDVIQSTHWPNIDLIGAQLILLYMAEFQIFVMRWAARS
WKLWDALTDRLEADGVLDQYDVFIDTDFPALGVLTINGLSAADILLVPMGASFLEFGS
TGRFFDMLHSTFASIEEGENLAARALGRPEIGFBWDAVRAVITXYDSAQQGELAQLVQ
AYMGPTLSPHRQDYTALIGQAGEQVNGIYEADYRDFNRETYARGRETFDATYAAFKRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAN05122.1"
/db_xref="G:22726326"
/translation="MAKEHHSKAGPALPPYFNIDPDAALAELDQPTDTARFAETAEGC
/translation="MAKEHHSKAGPALPPYFNIDPDAALAELDQPTDTARFAETAEGC
ARGRADLASRGLNEEGSKSLRLFSTWEITRYLIPVAQAHFRRVLKANPDLPQGRSETE
GGAKWFTLDEVLRLRAFFAAQGSKAKNYLPYRPEGLAAKLVAVANFKGGVGKTSTAAH
          LDPAEYQGQGTSIDVTSFVGFFISARAIARIGYPDPSLFIYGDDGIYTLGLTAAGGRI
GFEPGVRFEHDLTSFQGEGAVQRGRLTPLWKVYYYHRNLLILYRLAAGLWFWPVLLLI
LPRWLSKSRHYGRDGRIFRRLLCHAVRDGLRRRTSVSFETVKRWSGEG"
                                                                                                      /translation="mtsrklvavvvtynrldklkvtlarllespaeelaqvvvvnnas
tdgtadmletqhdprltvltsetnsggaggfamgmrhavetcapdmlvvmdddgrpap
galaafhalpedkwdaiaaavyfpsgeicemnrpsrnpfwrlsefirtalgggrsgfh
                                                                                                                                                                                                                                                                                                                                                                                                                                      KISSFVTLVSALDEALRFPTAIPEKLGLGLAHLLEKDPSFGPHLLERLRASDPADAVE
EMTVLNGAMTARNMVLNERLESDKDVPAVPRVQPPAPVTPPQAAAPSPVQMPPRSQAA
APLVVPASPSSDRVMLNIAPGLRLSFAEEAGTIELSGEAVTADLMTELKVWLSRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="makrkrltpaqptylsaaeraaatpspapglskgvsvgaapiaq
vasdtaaaleelsgylenararglwiteipleaidetylverpvoneedmlalma
sihargqqtpeievvaleopogghshclisgwrrltalrtlaetpapytyvaalityp
asaadaylswyeeneirvnlshyerariamraleegvppdqrkallglegnysaakrs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAHDLLVACNRETSGDAYRRLREAFERLAGTRITTNITTGGHEVTSGFGLIESWEIVR
KARGGRMVSVAVTLSDWLYRAVLSKSVLTLSRDYFRLRKPLERRIYELARKHCGRQDS
WQISVETLLKKSGSASPRRVFRKMIRDMIQSQPLPDYDISELPGDLIRFAQKHRLVES
                                                                                                                                                                                                                                                                 /cransl_table=11
/product="RB103"
                                                                                                                                                                                                                                                                                                                                                                    4513. .5487
/note="putative galatosyltransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAN05121.1"
/db xref="G1:22726325"
/tzanslation="MTG1STAAAGYPPEGQGAYFLCD1FDAMPKNDLASMEHPLFSLG
TRPDRRILNYEHNGAEITVTPSVKGLATIHDKDILIFCVSQLMAALNAGRQVSRTLHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="RB102"
/protein_id="AAN05123.1"
/db_xref="GI:22726327"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3022. .4191
/note="replication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>APPTVSEEAREEARRLMPGMDVHALEADWRAVWARTGAPRLRKPDAAFLGWVRKRAQD</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
/product="RB100"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (75.
                                                                                                                                                                                                             /protein_id="AAN05124.1"
/db_xref="GI:22726328"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LTGVWRREELALQQERAAS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transī
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="iteron2"
1223. .1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="RB101"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="replication protein RepA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="iteron3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="iteron1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="replication protein RepA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /plasmid="pSD20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   db_xref="taxon:185588"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             strain="PR1b"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Ruegeria sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .1079)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein RepB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PR1b"
                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon start=1
/transl tah'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical pu
/codon_start=1
/transl_table=:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRERNGPGGHVGQAGIKREGQIAACVEQKKTGAQRRGAHDQREPQRQKQDGGQRLODG
PDIAPGGAPVSRRHLSQDQRAQRTQYTGEASMYSDLGDLGRGHGGLLRRRRRGGGGHEA
SGEYCVVIRRRAGDTLSKMGMTKKTANAPGQADMKQDQVGLEATASGDDTDAQGKAG
AEENQPRGGGPGKGGGLGPIKAQKLREQVRAAEAMTRHLQRQLDEQPAYPVARPATLK
RRHWGILVSFVICVLLPLVLVYYYLWAIAEDQYVSTSGFVVRSQDATAASEALGGLAQ
LVGDGTASDSDVLYAFIQSQEIVEVVEREVGLRAHFSAHWPGDWAFALWPDATLEDLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product "RB106"
/protein_id="AAN05127.1"
/protein_id="AAN05127.1"
/db_xref="G1:27726331"
/translation="MITLQSFLTPDPEICSEQALYAHLKGAAVYSQSRQSYMMERGGE
/translation="MITLQSFLTPDPEICSEQALYAHLKGAAVYSQSRQSYMMERGGE
/translation="MITLQSFLTPLAELYAGORECYNTYMERGESTERVFSDVLTLT
PEQPAQLDLDHADGANSGLLYFLLAMAMDGTEVSGGRFATRSLPADRPLFLTIST
TFARETEVQRTVERLETFLAEHAYRDQIRVQVVDNGAEAGCPAQIESRGAITAYDNPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /protein_id="AAN05126.1"
/db_xref="G1:22726330"
/db_xref="G1:22726330"
/translation="MIRFENLTKYFMVDGORKTVIDNLNLTLPSGRSLALLGRNGAGK
/translation="MIRFENLTKYFMVDGGORKTVIDNLNLTLPSGRSLALLGRNGAGK
STLLEIIAGIORPDLGRVVTDGTMSWFVGLGASFHKDLSGVENVRF1RRIYGVDTDDL
STLLEIIAGIORPDLGRVVTDGTMSWFVGLGASFHKDLSGVENVRF1RRIYGDKSFRDK
VAFVQNFSELGAAFYSPMRTYSSGMRSRLTFGASMGIKFDTYLVDEVTAVGDKSFRDK
                                                                                                                                                                                                                                                             SLCLEDLMRLKVVQRHLTVSADVRHTIGWDIMHKFÄDMPPANPATKLRLHKSLAKDIR
ATYLEDARALDKTFFGKAPLMERELKAAIKNAADTPQRLEPSDHLAPEELRSLRLLAK
                                                                                                                                                                                                                                                                                                                           / translation="MAQHKTLIFHLGDCKTGSTSIOTAFAQERVOLQDASVTYPADLA
MNAMARNFSAYHEAKTPGDKAKAEARIAAFAKRLHQADSDFIVSAEDEWYPVSVFQ
ELYSRYFTGIADELRLISYVRPHAARLLSGYSERTKLGVYDAWNDSMCTPVEROXDRK
LFFYQPRFAAMRDAFGDAFQLRPMIPAQLHQGSVVQDFLHHAFGGLPTKLIGDEAANQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVQHLTI PELKRSALGTAKVAI YFTLRSLLRYHYSTAAVQLMAWQDVMKGPQFFEENI
DMSERRATI KEMSADEAWQPI AQVDLSEHRKGVATWSHRARHYWGLFTLNGHI LPCGG
ASKLVVDINRRALVI RAFGAARVSY INTNRDKAYTVARDRRRFFTLMWQMAKLTWQFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LGGAGGFARGLLEAEEAGASHCLFMDDDASFHMENIARTYIFLALAHDPATAVAGAMI
TNTHKWRMWESGAWFDGSCRPLFNGVDLREPEEVIEMALQAPHIHRPTLYGGWWFFAF
PIKAVTRHPFPFFVRGDDINFSLANEFNIRTLNGVVSFQDDFTEKESAQTLYLDLRYH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YWQRILGISYESGSGLMEVEASAYDPETAQAITRAIIAASQDRINALNEQARDDAMR
YARADIDDAYAQLKAAREALTOFRTRTRILDPQADIGARMGYMNLQQQLAEALVEYD
LLRGSGLNSDDPRLKTAEKTIDVIRERIDIERQTFASDNTETGGLGENYPELISEYERL
TVDQQYAEQVYRASLATLEVARDEATRQSRYLATYIKPTLPESSQYPDRPVMAGIAGL
/product="RB108"
/protein_id="AAN05129.1"
/db_xref="GI:22726333"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (11451. .12566)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RDFDSLQNSYGAGYESRTTKGFWQRILGKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SRVIFAERMKTSSAIMVNHNLNEVRQFCDAGIVLERGRATYFDDLDEAIALHQAMMMQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="polysaccharide export protein"
/codon start=1
/rrans1 table=11
/product="RB105"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GKPDRLDHGNRVNDRMGVFDGONPANENGADKNLGDTVEDETRODRVDPGDGRVFQER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MIAPHONOPOCOODORODDIERFDIGRRIGRIDPGTEOADDMD
QGIVPDQVLRLGGEILVDVDHPRGEKQRPVQDAPSGVPERKQVDQHTVRRPDAQSEYH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="RB104"
/protein_id="AAN05125.1"
/db_xref="GI:22726329"
                                                                                                      /codon_start=1
/transI_table=11
                                                                                                                                                                                                   VINGLLQEKGVDWPAALHDKRVEDIKNRALQPSTEGV"
12776. .13981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (8493. .10283)
                                                                                                                                                             note="putative UDP-galactopyranose mutase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein_id="AAN05128.1"
db_xref="GI:22726332"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product="RB107"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="no homolog identified by sequence similarity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLLVWSIFVLVYYSIRDRS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="no homolog identified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="putative polysaccharide export protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence similarity;
```

CDS

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
AP005679/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134963 bp DNA
Oryza sativa (japonica cultivar-group)
OJ1210 A07, *** SEQUENCING IN PROGRESS
AP005679
AP005679.1 GI:22775437
HTG: HTGS PHACES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
Direct Submission (1. and Katayose, Y. Submitted (05-SEP-2002) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mailtsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-74441, Fax:81-298-38-7468)
                                                                                                                                                                                                                                                                                                                                                                                           HTG; HTGS_PHASE2.

Oryza satīva (japonica cultivar-group)
Oryza satīva (japonica cultivar-group)
Oryza satīva (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                     Publ
                                                                                                                                                                                                                                                              Sasaki,T., Matsumoto,T. and Katayose,Y. Oryza sativa nipponbare(GA3) genomic DN clone:OJ1210_A07
                                                                                                                                                                                                                                                                                                                                                                        Ehrhartoideae; Oryzeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCGCTGCCGGCCTCGCCA 49029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                          olished Only in Database (2002) (bases 1 to 134963)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="RB109"
/product="RB109"
/product="RB109"
/product="RB109"
/product="RB109"
/product="G122726334"
/db_xref="G1:2726334"
/db_xref="G1:2726334"
/db_xref="G1:2726334"
/db_xref="MVPCPVENTETRVVVMSEHSSASTARQAVVVLGMHRSGTSALAG
/translation="MVPCPVENTETRVINDFLIELEHADWTWWRFLALDWLDS
KIGQELDRGTTMLAQEYGDAPLFVLKDPRICILLPYWTRLFAQMEIAPTYHTHRSP
VEVARSLERREGWPLVRGLLLWLRYSLEAEAQTGOPRAFTSYDOLLQDWRGALADIQ
TRCGLDLPVEVTPEICEEVEGFLSADLRHSTEALVCDGSLIEQWIGGCAQVLGRWAAE
GEDPEGRAALDQIRKAFDAAMPLFGAASAGQEAELAAVRAQLGQADAERLAEREHAAR
KYDBLLQKWQAETAQLQAVWQAEKAQWBAAIEAREKAAIABAEAREAAIEAREKT
KAQTTRURLMQVEQQKAYEVDLSTALSGORRHAENRQEELRAEWQRAVAARDQAQALVV
HRDEBIERLARRDLERQIIDREVLEQREQALRQSTSWRLTAPLRWVVNGLRGRA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="mrhrsriweqamaaqklimvgaglsgavigrhlaeaghditivd
Ardhiggnchterdsdygwhatygphiftddaewdyvnrerefeplapkr
DPNGQRGVFSLPVNLHTIQFFGKTLRFEEAHDFITKEQADTS!TDPGYFEEQAMRFU
GKDLYEAFFKGYTIKQMGVHPSELPASILKRLPVRFNYDDNYFFHKFQGMPENGYTSM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /translation="MISGSKGESMMTTHADLDSLFQSDWYLEQNPDVADHFVGSALEH
YRHFGWREGRSPHPLFDVAWYLSQSPECLSEGLEPLTHYLHFGWKDMRSPHPVLNPAA
YLRRNPDLMQADINPWLYYLQSGWQEGRSLHPLFDTRWYLAVYEDVAEAGIEPLSHYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QGDYQGCAVMNYGEEEVPYTRITEHKHFSPWEEHEGSVLYREFSRLAEPDDIPYYPIR
QVQEKALLADYVKLAEETSGVTFVGRLGTYRYLDMDVTIREALDTARGFEAKTAAGDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RRGWREGRGAHPLFASGWYAETQQLGADENPWLHYITTGWREMRPPHTRFDARWYHDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
/product="RB110"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPPFFEAPL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="AAN05131.1"
/db_xref="GI:22726335"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="putative glycosyl transferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="no homolog identified by sequence similarity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14006.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IGKILDHPGITVQLSTSFSREMGEGYDHVFYSGALDGYFDYELGRLGYRTLDFERFTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36.5%; Score 19; DB 1; 100.0%; Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .19611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .15517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
                                                                                                                                                                                                                                                                                                                                                                        Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                       DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chromosome 9 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 76093;
                                                                                                                                                                                                                                                                                          chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

SdC

밁 ઠ

SOURCE

KEYWORDS VERSION

COMMENT

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
AP003250/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                        JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                               Sasaki, T., Matsumoto, T., Yamamoto, K., Sakata, K., Baba, T.,
Katayose, Y., Wu, J., Niimura, Y., Cheng, Z., Nagamura, Y.,
Antonio, B.A., Kanamori, H., Hosokawa, S., Masukawa, M., Arikawa, K.,
Chiden, Y., Hayashi, M., Okamoto, M., Ando, T., Aoki, H., Arita, K.,
Chiden, Y., Hayashi, M., Okamoto, M., Ando, T., Aoki, H., Arita, K.,
Chiden, Y., Hayashi, M., Okamoto, M., Ando, T., Aoki, H., Arita, K.,
Hamada, M., Harada, C., Hijishita, S., Honda, M., Ichikawa, Y.,
Itoh, Y., Itoh, Y., Ikeda, M., Ikeno, M., Itoh, S., Itoh, T.,
Itoh, Y., Itoh, Y., Iwabuchi, A., Kamiya, K., Karasawa, W., Katagiri, S.,
Kikuta, A., Kobayashi, N., Kono, I., Machita, K., Machara, T.,
Mizuno, H., Mizubayashi, T., Mukai, Y., Nagasaki, H., Nakashima, M.,
Nakama, Y., Nakamichi, Y., Nakamura, M., Namiki, N., Negishi, M.,
Ohta, I., Ono, N., Saji, S., Sakai, K., Shibata, M., Shimokawa, T.,
Shomura, A., Song, J., Takazaki, Y., Terasawa, K., Tsuji, K., Waki, K.,
Zhong, H., Yamane, H., Yoshiki, S., Yoshihara, R., Yukawa, K.,
Zhong, H., Iwama, H., Endo, T., Ito, H., Hahn, J.H., Kim, H.I., Eun, M.Y.,
Yano, M., Jiang, J. and Gojobori, T.
The genome sequence and structure of rice chromosome 1
L. Nature 420 (6913), 312-316 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76439 CTCATCGCTCTCGTCGCTG 76421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         combining Monsanto and RGP-Japan sequencing data.

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* NOTE: This is a 'working draft' sequence.

* This sequence will be replaced

* by the finished sequence as soon as it is available and

* the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Submitted (19-FEB-2001) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mail:tasasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-7441, Fax:81-298-38-7468)
On Aug 31, 2001 this sequence version replaced gi:14522861.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (japonica
PAC clone:P0443D08.
AP003250 BA000010
AP003250.3 GI:15408719
                                                                                                                                                                Direct Submission
                                                                                                                                                                                    2 (bases 1 to 146670)
Sasaki, T., Matsumoto, T.
                                                                                                                                                                                                                                                                          22337376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AP003250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                           12447438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCATCGCTCTCGTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Oryza sativa (
/mol type="genomic DNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947"
/chromosome="9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="OJ1210_A07"
30063 c 30068 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .134963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:15408719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30068 g 37798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146670 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cultivar-group)
                                                                                                                                                                                         and Yamamoto, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
genomic DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 134963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cultivar-group) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLN 29-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                           Eun, M.Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

misc_f	gene		CDS	gene			CDS	gene				CDS	gene			EATURES source								
feature complement (866010035) /gene="P0443D08.4"	/GD_XFET="G1:15408722" /ICANSIAELON="MSLVRRSNVFDPFADFWDPFDGVFRSLVPATSDRDTAAFANARV /ICANSIAELON="MSLVRRSNVFDPFADFWDPFDGVFRSLVPATSDRDTAAFANARV DWKETPESHVFKADLFGVKKEEVKVEVEEGNVL/VISGQNSKEKEDKNDKWHRVERSSG QFWRRFRLPENAKUDQVKASWENGVLTVTVPKAEVKKPEVKAIEISG" COMPLEMENT (866010035) /GRONE="P0443DNB.4"	<pre>/note="contains EST AU093701(C63333)" /codon_start=1 /product."putative 16.9 kDa heat shock protein" /protein_id="BAB64125.1"</pre>	complement (60516500) /gene="P0443D08.3"	Complement (60516500) /gene="P0443D08.3"	/ COUNTY SEARCE 1. 1	/gene="P0443D08.2" /note="hypothetical protein" /codon start=1		AIEASP" complement(join(40714126,42834398,55255601))	/ 60 V C C C C C C C C C C C C C C C C C C	unknown protein" /codon start=1 /cotor id-"BABEA123 1"	/Journel Fortable (1998) / notee Footbain ESTs D48568 (S14863) / notee Footbain ESTs D48568 (S14863) / AU089765 (S14863) / Similar to 16.9 kDa heat shock protein	7977- 1974-1970-1 2727 - 3227	/clone="P0443D08" 2727, .3227	/chromosome="1"	/organism="Oryza sativa (japonica cultivar-group)" /mol type="genomic DNA" /mol type="genomic DNA"	Location/Qualifiers 1. 146670	information on overlap and assembly quality together with annotation of this entry is available at http://rgp.dna.affrc.go.jp/GenomeSeq.html.	sequence of this clone starts at the position 138,088 of end. The Sequence of this clone starts at the position 138,088 of DARRENO DATA:	(DDBJ: AP003214) at the position 1 to 624 and with P0480E02 (DDBJ:	The orientation of the sequence is from T7 to SP6 of the PAC clone.	classified based on the protein name to indicate the homology level such as same name, 'putative-' and '-like protein'. A gene without significant homology to any protein but with EST homology (covering almost the entire length of partial sequence) is classified as an 'unknown' protein. A gene predicted with a gene prediction program 'unknown' protein. A gene predicted with a gene prediction program	the identified CDNA sequences using BLASTN 2.0 with the corresponding DDBJ accession no. and RGP Clone ID. A dene with identity or significant homeoclopy to a proper is	(rtp://ncoi.nlm.nin.gov/blast/dD) and the CDNA sequence database at RGP. Protein homologies of the coding regions were searched against NCRI NonRedundant Protein database with Riagrap O FCTE represent	GENSCAN1.0, BLASTN2.0, BLASTN2.0 as well as SplicePredictor (October 1998 version). The genomic sequence was searched against NCBI NonRedundant Protein database, nr
gene									CDS	gene				CDS	gene				CDS	gene			CDS	gene

FΕ

```
nent (join (19682...20619, 20791...21045, 21998...22714, ...23926, 24506...25205))
"P0443D08.B"
nent (join (19682...20619, 20791...21045, 21998...22714, ...23926, 24506...25205))
                                                                                                                                                                                                                                                                                                                                                                                                                                                             contains ESTs AU030772(E60216),AU030771(E60216) to wall-associated kinase protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       if_ id="BAB64128.1"
if_"G:1:15408725"
lation="MEGCHGCGWYTASHFVDVEREWEKRPRVKSFWVLVRRLLCCRRK
AAAGEEDDGEKSSLLLTSRSSLEELLVSDDADDDGAIDDAAVTCRNASLCAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TI="putative 16.9 kDa heat shock protein"
in id="BAB64127 l"
sf="GI:15408724"
lation="MSLVRRSNVFDPFSLDLWDPFDSVFRSVVPATSDNDTAAFANAR
PESHVFKADLPGVKKEEVKVEVEEGNVLVISGORSKEKEDKNDKWHRVERSS
RLPENAKVDQVKAGMENGVLTVTVPKAEVKKPEVKAIEISG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lation="mslvrrsnvfdpfsldlwdpfdsvfrsvvpatsdndtaafanar
PBSHVfKADLPGVKKEEVKVEVEEGNVLVISGQRSKEKEDKNDKwHRVERSS
PRLPENAKVDQVKAGLENGVLTVTVPKAEVKKPEVKAIEISG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TE="putative 16.9 kDa heat shock protein"
in_id="BAB64126.1"
f="GI:15408723"
 ent (join (27648.
                 ent (join (27648. .27664, 28123. P0443D08.9"
                                                                                                                                                                                                                                                                                                                                                                                                             n_id="BAB64129.1"
f="GI:15408726"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nent (join (16992. .17439,18474. .18547))
190443D08.7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nent (join(16992. .17439,18474. .18547))
"P0443D08.7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contains EST AU092880 (C60687) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P0443D08.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P0443D08.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nent (10583. 11035)
'P0443D08.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nent (10583. .11035)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VVLPPPGLHHPVMARPAHGMVTTSSGGGRDGAAVQCRRRFMFGGLRRRLMM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contains EST AU092880 (C60687) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pseudogene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .14077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .14077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to non-LTR retroelement reverse transcriptase"
.27664,28123. .28903))
                                    28903))
```

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
REFERENCE
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AP005509/c
                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                              AL Submitted (10-JUL-2002) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-7441, Fax:81-298-38-7469)
The nucleotide sequence of this BAC clone was generated by combining Monsanto and RGP-Japan sequencing data.

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of W. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* NOTE: This is a 'working draft' sequence.

* This sequence will be replaced

* by the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24 CGCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sasaki,T., Matsumoto,T. and Katayose,Y. Oryza sativa nipponbare(GA3) genomic DN clone:OJ1003_A09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AP005509.1 GI:21728111
HTG; HTGS PHASE2.
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Oryza sativa (japonica cultivar-group)
OJ1003_A09, *** SEQUENCING IN PROGRESS
APO0556a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published Only in Database (2002)
2 (bases 1 to 156485)
Sasaki,T., Matsumoto,T. and Katayose,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AP005509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                       the finished sequence as soon as it is accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIYAYLGGIYDRDNPPAIKAGNCTYSYLPVLWPDSPANLTAGTNYSPQFKKGFVLEWQ KNGFGDCDACNGSGGCRYINDSAAAFACLCSDGKLRRSTCPGCRSF" complement (join(29901. .29938, 29998. .30738, 30790. .30937, 30978. .31158, 31206. .31362, 31389. .31517, 31689. .31800, 31910. .32176))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /proteIn_id="BAB64130.1"
/db_xref="G1:15408727"
/db_xref="G1:15408727"
/translation="MPTLLCLPLLASLLLLCHRARAECEPATCGNLTVRYPFWLGGP
/translation="MPTLLCLPLLASLLLLCHRARAECEPATCGNLTVRYPFWLGGP
NFNQSNQSSPSALASCGHPAFFVWCNGGVASLAGSQILVLSIDYNSSSFVAAHKRVA
DGGDGVCRTDFNISSSLALSPFTISSSNRAIGFLYSCNGTEPPEIDGLVNATISSCSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="P0443D08.9"
/note="hypothetical protein"
                    /clone="OJ1003_A09"
34663 c 35167 g
                                                                                                              /organism="Oryza sativa
/mol_type="genomic DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="P0443D08.10"
                                                                     db_xref="taxon:39947"/chromosome="8"
                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                              . .156485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36.5%; Jred. No.
100.0%; Pred. No.
100.0%; Mismatches
                       42451
                                                                                                                                                                  (japonica cultivar-group)"
                       ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chromosome 8 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 146670;
                       317 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                 available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

ş

В

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                RESULT 12
AP004776/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
AP005742
   VERSION
KEYWORDS
                                                                                                                                                                                           망
                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                         ACCESSION
                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dha.affrc.go.jp/, Tel:81-298-38-7441, Fax:81-298-38-7468)

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* This is a 'working draft' sequence.

* This sequence will be replaced

* by the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91526 ACGCTCTCATCGCTCTCGT 91508
                                                                                                                                                                                           2999 CTCATCGCTCTCGTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14 ACGCTCTCATCGCTCTCGT
                                                                                                                                                                                                             19 CTCATCGCTCTCGTCGCTG
                                           AP004776
Oryza sativa (japonica cultivar-group)
*** SEQUENCING IN PROGRESS ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oryza satīva (japonica cultivar-group) oryza satīva (japonica cultivar-group) oryza satīva (japonica cultivar-group) Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Oryza.
 AP004776
AP004776.1 GI:18844996
HTG; HTGS_PHASE2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oryza sativa (japonica cultivar-group)
*** SEQUENCING IN PROGRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (11-SEP-2002) Takuji Sasaki, National Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sasaki,T., Matsumoto,T. and Katayose,Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Published Only in Database (2002)
2 (bases 1 to 157945)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone: P0489D11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sasaki,T., Matsumoto,T. and Katayose,Y Oryza sativa nipponbare(GA3) genomic D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HTG; HTGS_PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AP005742.1 GI:22830820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AP00574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                               45183
HTGS_PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36.5%; Score 19; DB ilarity 100.0%; Pred. No. 11. Conservative 0; Mismatches
                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                              /organism="Oryza sativa (
/mol type="genomic DNA"
/culTivar="Nipponbare"
/db xref="taxon:39947"
/chromosome="9"
                                                                                                                                                                                                                                                                                                                                                           /clone="P0489D11"
35304 c 34626 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .157945
                                                                                                                                                                                                                                                                                    36.5%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                           34626 g
                                                                                                                                                                                                                                                                  Score 19; DB; Pred. No. 11; 0; Mismatches
                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                           3017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               157945 bp
                                                                                                                                                                                                                                                                                                                                                           42530
                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (japonica
                                                                                                                                                                                                                                                                                                                                                             r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA,
                                                                           linear HTG 21-FEB-2002 chromosome 2 clone P0452F04,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chromosome
                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 156485;
                                                                                                                                                                                                                                                                                                      Length 157945;
                                                                                                                                                                                                                                                                                                                                                             302 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cultivar-group) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTG 12-SEP-2002
                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
AP005937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan

(E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-7441, Fax:81-298-38-7469]

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* This sequence will be replaced

* by the finished sequence as soon as it is available and the accession number will be preserved.
        Sasamoto,S.,
                                                                        22484998
12597275
                                                                                                        Complete genomic sequence of nitrogen-fixing symbiotic bacterium Bradyrhizobium japonicum USDA110 DNA Res. 9 (6), 189-197 (2002)
                                                                                                                                                                        Kaneko,T., Nakamura,Y., Sato,S., Minamisawa,K., Uchiumi,T., Sasamoto,S., Watanabe,A., Idesawa,K., Iriguchi,M., Kawashima,K., Kohara,M., Matsumoto,M., Shimpo,S., Tsuruoka,H., Wada,T., Yamada,M. and Tabata,S.
                                                                                                                                                                                                                                                                 Bradyrhizobium japonicum USDA 110
Bradyrhizobium japonicum USDA 110
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Bradyrhizobiaceae; Bradyrhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viiidiplantae, Streptophyta, Embryophyt
Spermatophyta; Magnoliophyta; Liliopsida; Poales;
                                                                                                                                                                                                                                                                                                                                                                                                                                     AP005937 298900 bp DNA Bradyrhizobium japonicum USDA 110 DNA,
                                                                                                                                                                                                                                                                                                                                                                                AP005937.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sasaki, T., Matsumoto, T. and Yamamoto, K. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sasaki, T., Matsumoto, T. and Yamamoto, K. Oryza sativa nipponbare (GA3) genomic DN
                               Kaneko, T.,
                                                                                                                                                                                                                                                                                                                                                                           AP005937 BA000040
AP005937.1 GI:27348808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published Only in Database (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGCTCTCGTCGCTGCCGGC 121543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 172081)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="P0452F04"
36993 c 37880 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Oryza sativa
/mol_type="genomic DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:39947"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
      Nakamura,Y., Sato,S., Minamisawa,K., Uchiumi,T., Watanabe,A., Idesawa,K., Iriguchi,M., Kawashima,K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                     complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Embryophyta; Tracheophyta; a; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 172081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cultivar-group) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 others
                                                                                                                                                                                                                                                                                                                                                                                                                                     genome, section
                                                                                                                                                                                                                                                                                                                                                                                                                                                        BCT 28-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                           Sas
                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (20-NOV-2002) Takakazu Kaneko, Kazusa DNA Research Institute, The First Laboratory for Plant Gene Research; 2-6-Kazusa-kamatari, Kisarazu, Chiba 292-0812, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Complete genomic sequence of nitrogen-fixing symbiotic bacterium Bradyrhizobium japonicum USDA110 (supplement)
DNA Res. 9 (6), 225-256 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          URL:http://www.kazusa.or.jp/rhizobase/,
Tel:81-438-52-3935(ex.2338), Fax:81-438-52-3934)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kaneko, T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and Tabata, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kohara, M., Matsumoto, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (E-mail:kaneko@kazusa.or.j
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12597279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 298900)
  /transI tak;
/pro-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="blr0562"
1073. ""
                                                           /note="ORF_ID:bll0563
hypothetical protein"
                                                                                                                                          complement (2294. .2662)
/gene="bl10563"
                                                                                                                                                                                               /translation="mrnalglmlasyvaavviaaggmfyysasadpgapktvaaraad
plapatkiaakddvattaaiaakptavagasaptpapvapvagacanpnalgvarv
veidttggpgfgfehfkgfdfltdkevvltfeddfvntpapkkalabectkglffs
vgkhatyhbeilrgvlagghtvgthymshvnlnskkmtegdykdevekfsaavpald
vgkailhheipgkivagampallarlkaggykvvqmkakttfgtlpekivethkdlkv
lkkiilhheipgkivgeampallarlkaggykvvqmkakttfgtlpeydeallkdlkv
                                                                                                                                                                                                                                                                                                                                                                                                       /gene="blr0562"
/note="ORF_ID:blr0562
putative polysaccharide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein id="BAC45825.1"
/db_xref="G1:27348809"
/translation="WTRFLEVISULICASGASAQQQPGHDACARDVTRFCRPVMNNGD
QAVLACLKQNRTRLSKGCDKVLTEHGQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="ORF_ID:bsl0560 hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(114. .329)
/gene="bs10560"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="bs10560"
                                                                                                              complement (2294. .2662)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="ORF_ID:bl10561
unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (495. .818)
/gene="bl10561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (495. .818)
/gene="bll0561"
                                                                                                                                                                                PTSSARPIGSVVQTVSQ"
                                                                                                                                                                                                                                                                                                                      /codon start=1
/transI_table=11
/protein_id="BAC45827.1"
/db_xref="GI:27348811"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
/protein_id="BAC45826.1"
/db_xref="GI:27348810"
/protein_id="BAC45828.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                    gene="bl10563"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'translation="MTKSFTAKSLTSKSLSSKIRDTSLALGFAAIVSIVSTTSSFAFS
LEAQQQCTGDAFRLCSSEIPNIFKITACMMKHRSDLSAGCRAVMDKDLAKGASRKVAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        strain="USDA110"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Bradyrhizobium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .298900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _xref="taxon:224911"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shimpo, S., Tsuruoka, H.,
                                                                                                                                                                                                                                                                                                                                                                                                         deacetylase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              japonicum USDA 110"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wada, T., Yamada, M
```

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="bl10565"
/gene="bl10565"
complement(4784...5995)
/gene="bl10565"
/note="ORF_ID:bl10565
hypothetical protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="bl10564"
/note="ORF ID:bl10564
hypothetical protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VFLLGLEPAANVLVWSILTTIWRTPGRURRRSHEKRHARGHANTHEKF VFLLGLEPAANVLVWSILTTIWRTPGRURRRSHEKRHARGHAITHGLLAIGHGDTAL ARRHAETARRHAPNDPLALLLHAGSAQLEGNRDEAQRAFRAMAEREDTRLLGLERGLFI EAQRADDAVCAVMIAEEAIKLSSUSSTWASHAVLGFRCARGDWSGALLILDSNISAGLI DKPAYRRQRGVLLTARALELOTWDRDVARESVWEAIKLAPTLVPAAVLAAKTESEAHQ VRRAMKLVEAAMLANPHPDLAEAYAHVKLGDSARQRLQRVETLAAKTPADKAGHIEGD LALLRAAIDASEFSRARAVLAPVNDPTQRVALLWAEIERTEHGDGRARAMTLANVRARVESVWEDIKGRURFSSARGRLQRVETLAAKTPADKAGHIEGD LALLRAAIDASEFSRARAVLAPVNDPTQRVALLWAEIERTEHGDGRARAMTLAAVRARHPUSPVTGRLDAFQWOTPVASLPSDKGDLIESSAREEAMLAAPVNDPTGRUDAFDWOTPVASLPSDKGDLIESSAREEAMLAAPPVNDPTGRUDAFDWOTPVASLPSDKGDLIESSAREEAMLAAPPRARAVTAPANDTLMEPAPAASVPAEGDNSPPAAKEEPKEEPAMTSAEVTPAPEPAAESSPAAATPVRTRADIGKPABPVPPAPUFPAVIPTVAAPDDPGIDDEGPSDEFTEQIGTPKAQAGGRGFWSRWGA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /protein_id="""
/db ""
/translation="mlvlgiettcdetaaavierapdgigkilsnivrsqydehapfg
GVVPEIAARAHVDLLDGIIDRAMREAGIGFAQLNGVAAAAGPGLIGGVIVGLTTAKAI
ALVHDTPLVAVNHLEAHALTPRLTDGIEFPYCLFLASGGHTQIVAVTGVGQYVRLGTT
                                                                                                                                                                                                                                                                                                     /protein_id="BAC45831.1"
/db_xref="GI:27348815"
/translation="MSILVTREHPDNEATADNLRARGHVVLLAPVLKFEPVAFHDESE
ANYSAIIVTSANAIRAPPQLQDLGLLKLPLFAVGEHTATAARDAGFAEVIIAGGDSA
ALRDTVVRSARDKVLKKKSTLLYLAGABLSRDLGGELGTEGENVVTQTTYRMAPVKVL
PRDVCEGFAAHGIEAVLHYSRRSARAFLDAARDEGVEISALAIPQCCLSETVASVLRD
AGASQVLVAAKPDENALFDTLERALQTRLA"
                                                                                                                                                                                                                                        /gene="gcp"
6983. .8056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="maddkpedaglapesgrakrppptidleatdvstqpqevagepe
Appvsshtepegoksegoadeeberaeagavapeasppvspwvjaplsgavapavvi
Avgrmilgmpavqappahpqvtsatvdalggrvaavekagkpaadpamykatidaleks
Vgsirsdianlraqsdktasalndaksapgaaspdlaalydriaqleragkteraela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein/
/db_xref=
                                                                    /codon_start=1
/transl_table=1
/product="0-sialoglycoprotein endopeptidase"
/protein_id="BAC45833.1"
/db_xref="GI:27348816"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="ORF_ID:bl10566
putative uroporphyrinogen III synthase (EC 4.3.1.8)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (6085. .6831)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (6085. .6831)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DAMADLVKPAQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     drga i varvtaaalrndf vearrelktlpdadrapaqawldkanardaalaasrkfad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQGEKI ADARTMODKPLRHVVAAALLDVAVRHGDPYEAQLAAARSLAAKPEMLKPLDT
FASSGI PTPVALSRELLNI VSKLSPPADAQSSGGGI VERLQAGASKLVRI ERTDGVGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (3005. .4747)
/gene="bl10564"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="trnT-CGU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="GI:27348812"
/translation="MRKIILVAAMVLASASAQAAGPRSLSLATASEQASAPQATATIA
/TTQVSEAAPVTEAPKYVDRPPAISAPAPAAAPAVATTTSAPAATATKTTAKVNKPKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (3005. .4747)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KRTWTEGRIISELHRHGIYW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="bl10566"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           transl
                                                                                                                                                                                               note="ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="bl10566"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            otein_id="BAC45829.1"
_xref="GI:27348813"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      otein_id="BAC45830.1"
_xref="GI:27348814"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                                          _ID:blr0567"
                                                                                                                                                                                                                                                                             TITLE
JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
AY142898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                         AUTHORS
  Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19;
                                                                                                                                                                                                                                                                                                     12446909
```

```
273395 regrederecedecerede 273413
                                                                                                                                 Direct Submission
Submitted (19-AUG-2002) Bioinformatics,
2201 W. Campbell Park Dr., Chicago, IL
                                                                                                                                                                                                  2 (bases 1 to Liolios, K.G., C) Koukharenko, V.,
                                                                                                                                                                                                                                                                                       Whole-genome analysis of photosynthetic Science 298 (5598), 1616-1620 (2002) 22337798
                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 1500)
Raymond, J., Zhaxybayeva, O.,
Blankenship, R.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AY142898 1500 bp DNA line Heliobacillus mobilis Inosine-5'-monophosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Heliobacillus mobilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AY142898.1 GI:27262441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           partial cds.
AY142898
                                                                                                                                                                                                                                                                                                                                                                                                                           Heliobacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Firmicutes; Clostridia; Clostridiales; Heliobacteriaceae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Heliobacillus mobilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGTCGCTGCCGGCCTCGC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="blr0569"
/note="ORF ID:blr0569
hypothetical protein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="mtafksvavigagawgtalawvaaragrsvtlwarnaehatria
Strdnerlegvrlaedivvtselalaaradmlliateachlrgavnmlashiaretev
Vacakgiehgthkemteviaeaalhaqeailsgesfaddvargletavtlaakeeela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VDDAIGEAFDKVAKMLGLPYPGGPQVERAAAGGDAARFAFPRPMQGRPDANFSLSGLK
TAVRNEASRIAEITPQDISDLCASFQAAVLEATADRLNVGLRLFREQFGAPRALVAAG
GVAANQAIRGALHDVARQAKTQLIMPPPALCTDNGAMIAMAGAERLALGMTDTMEAQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="blr0569"
9344. .9790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSLVQALGSPTFRPYHSTDVRGVEIGGAAKNVLAIAAGIVVGRNLGASALAALTTRGF
SELARLGRACGARPETLSGLSGLGDLLLSCSTAQSRNFALGIALGRGEAAPAGKLAEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="gpsA"
8245. .9225
/organism="Heliobacillus mobilis"

/mol type="genomic DNA"

/db xref="texon:28064"

/noce="RHM003875"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AFTAPVLVELAAARNVDMPVSQAVAAILDNKLTIDAAIEGLLTRPFKAEE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8245. .9225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RARWLLDANATAPAGYGKTRAGF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /transl_table=11
/protein_id="BAC45834.
/db_xref="GI:27348818"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="glycerol-3-phosphate dehydrogenase [NAD(P)+]"
/protein_id="BAC45833.1"
/db_xref="GI:27348817"
                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="gpsA"
/EC_number="1.1.1.94"
/note="ORF_ID:blr0568"
                                                                                                                                                                                                                         Chu, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36.5%; Score 19; DB 100.0%; Pred. No. 10;
                                                                                                                                                                                                                                                1500)
                                                                                                                                                                                             hu,L., Ostrovskaya,O., Mendybaeva,N., Gerdes,S., Kyrpides,N. and Overbeek,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .9790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                             Gogarten, J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.
                                                                                                                                 ics, Integrated Genomics, Inc., IL 60612, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                 prokaryotes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 298900;
                                                                                                                                                                                                                                                                                                                                                                             Gerdes, S.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dehydrogenase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BCT 19-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY262750/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kluyveromyces yarrowii Kluyveromyces yarrowii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY262750 2349 bp DNA linear PLN 04-MAY-2003 Kluyveromyces yarrowii recombinational repair protein Xrs2 (XRS2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (26-MAR-2003) whitehead/MIT 320 Charles St., Cambridge, MA 02141,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; Saccharomycetaceae; Kluyveromyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Birren, B., Kamvysselis, M., Nusbaum, C. and Lander, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY262750.1 GI:30350867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCTCGTCGCTGCCGGC 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 2349)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Charles St., Cambridge, I
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                           /translation="mmilryQvvagngmdvhvscclkqglqysigrstknplqiksdk
sisrnhyelevdgscnvvlrvqgktkysksvkagqhlqftadeevlfemgaspika
tvvkqosfwkiphdlslsqslskhladfdigvtnslssttsiqiikdskssiksrcles
Liknipilreherigdfvvqindyhadfdsrmdrmvenaqffnykcecrepttihfly
tvrrapapaifahidagsgtlmlcddisnldhfikhtisdnvilllyhlngkssisst
eqssdldvqbakllknkaqnldfrihdvdivgavldhrekllervynrhlpskaft
ggssdldvqbakllknkaqnldfrihdvdivgavldhrekllervynrhlpskaft
gfplebatniksviksaqtrefsbikrakrarqvvpldslaffgdgsaabskqnyftevpe
serghetsqnttefabgepspkkarigaltvrdinnslinesgeplpktkstslkenaaqaq
adavqtrakkrsrktlqasgentilendnuslinesgeplpktkstslkalaqaq
adavqtrakkrsrktpdasgentilendnuslinesgeplpktkstslkalaqaq
adavqtrakkrsrktpdasgentrkibtenalvit
kdlmradreyavcgqsgseqmarknekkrvklmpsrssrnsgbtstlkdkalvet
kdlmradreyavcgqsgseqmarknekkrvklmpsrssrnsgtstedeainkldkalalvet
kdlmradreyavcgqsgseqmarknekkervklmpsrssrnsgtstdeapher
treyvplrpysgqnannqddsflknsgddlqebatcpsjppvssttilgvevddspaf
treyvplrpysgcqnannqddsflknsgddlqebatcpsjppvssttilgvevddspaf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VEKLKGEFPQVDIIAGNVATYEATIDLINAGADCVKVGIGPGSICTTRVVAGIGVPQI
TAIADCARAAREKNVPIIGDGIKFSGDVKAIAAGANVVMIGSLLAGTEESPGDIEI
YQGRSFKVYRGMGSLGAMKEGSKDRYFQEDDKKLVPEGIEGRVPYKGSLSDTVFQLIG
GLRSCMGYCGCRNIDELMTRTOFIRITAAGLRESHPHDVTITKEAPNYSL"
3 392 c 413 g 323 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAN87502.1"
/db_xref="G:2726242"
/db_x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="XRS2"
/codon_start=1
/product="recombinational repair protein Xrs2"
/protein id="AAP22944.1"
/db_xref="GI:30350868"
LFRSQQEDDAYGPDGGLGQRNQHTSVDKDSNRDQELFVFDEEDSQRDHVDTYTDAVQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /mol_type="genomic DNA"
/db_xref="taxon:51620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="XRS2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="XRS2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Kluyveromyces yarrowii"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'product="recombinational repair protein Xrs2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="Inosine-5',-monophosphate dehydrogenase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EC_number="1.1.1.205"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . >2349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center for Genome Research, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1500;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

/ERSION

Sg

Pocus

밁 S ORIGIN

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 16
AC009913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                 Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Mar 20, 2000 this sequence version replaced gi:6996979.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgy@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.
* NOTE: This is a 'working draft' sequence. It currently consists of 41 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are unknown.
* This record will be updated with the finished sequence will he are seon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2312 TCATCGCTCTCGTCGCTG 2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciceiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M. A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, I Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, I Kearney, L., Lee, B., Lewis, S., Li, Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacieb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu.C., and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster chromosome 2 RPCI-98 04.F.6 map 41C-41C strain y; PROGRESS ***, 41 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC009913.10 GI:7264759
HTG; HTGS_PHASE1.
Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC009913
                                                                                                                                                                                                 be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rcarcecreregice; 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 63781)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 63781)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            760 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34.6%; Solilarity 100.0%; I Conservative 0;
     510
590
970
1050
1577
1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RSASGARYQQPEPSISASKNCAPQDSDESDDEPRFQFQSRKR<sup>1</sup>
3 480 c 538 g 571 t
                                                                            509:
589:
969:
1049:
1576:
gap of unknown length of 309 bp in length length of 300 bp in length contig of 300 bp in length gap of unknown length contig of 527 bp in length length of unknown length contig of 639 bp in length gap of unknown length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 18; DB; Pred. No. 42; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63781 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 8;
42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BACR04F06 (D1057)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCING IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTG 20-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

length

```
8857 Contig
9508 Gap of
10479 Contig
11267 Gap of
11267 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
gap of
contig
gap of
contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of unknown length
of unknown length
of unknown length
ig of 1559 bp in length
of unknown length
ig of 1252 bp in length
of unknown length
                                                                                                                                                                                              f unknown length

ig of 689 bp in length

inknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               f unknown length
g of 647 bp in le
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown lengtl
g of 387 bp in
f unknown lengtl
g of 575 bp in
                                                                                                                                                                                                                                                                                                    unknown lengt
of 643 bp in
                                                                                                                                                                                                                                                                                                                                   unknown
of 5973
                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
of 5867 bp in length
unknown length
of 5951 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
of 3058 bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown lengt
of 984 bp in
              unknown length
of 307 bp in length
unknown length
                                                     of 303 bp in
                                                                                  O.F
                                                                                                                                                                unknown length
of 588 bp in length
                                                                                                                                                                                                                                                                          unknown length
of 307 bp in length
                                                                                                                                                                                                                                                                                                                                                            of 6817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown length
of 1564 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown length
of 2228 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown lengt
of 571 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown lengt
of 429 bp in
                                                                                                                                      unknown lengt
of 368 bp in
                                                                                                                                                                                                                                                                                                                                                                                         of 6472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 891 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 602 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 688 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 415 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 568 bp in
                                                                                                unknown
                                                                                                            of 612 bp in
                                                                                                                            unknown
                                                                                                                                                                                                                                                 unknown lengt
of 484 bp in
                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
  348
                                                                                  410 bp in length
                                                                                                                                                                                             383 bp in
  ď
                                                                                                                                                                                                                                                                                                                  bp in length
length
                                                                                                                                                                                                                                                                                                                                                                                      length
bp in length
                                                                                                                                                                                                                                                                                                                                                          length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                        length
                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                      length
                                                                                                                            length
                                                                                                length
                                                     length
                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
  length
                                                                                                          length
                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 17
AC025921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                        Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F., Anderson, S., Baldwin, J., Barna, N., Bastien, V., Beda, F., Anderson, S., Boldwin, J., Barna, N., Bastien, V., Beda, F., Anderson, S., Collymore, A., Coske, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., Deyle, M., Ferreira, P., FizHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Galagan, J., Grant, G., Hagos, B., Heaford, A., Horton, L., Grand-pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Grand-pierre, N., Jonnson, R., Jones, C., Kann, L., Karatias, A., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheetters, R., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheetters, R., Murphy, T., Naylor, J., Norman, C.L., O'Connor, T., O'Donnell, P., O'Neil, D., Naylor, J., Norman, C.L., O'Connor, T., O'Donnell, P., O'Livar, T.M., Olivar, T.M., Oliver, J., Peterson, K., Pietre, N., Pietre, N., Schauer, S., Scauge, Thomann, N., Stoljanovic, N., Subramanian, A., Talamas, J., Targilio, J., Vonnell, P., Volassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W.J., Voung, G., Zaimer, A., and Zodv, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34873 CATCGCTCTCGTCGCTGC 34890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21 CATCGCTCTCGTCGCTGC 38
                                                                              Submitted (17-MAR-2000) Whitehead Institute/MIT Center for Genom Research, 320 Charles Street, Cambridge, MA 02141, USA All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html http://ftp.genome.washington.edu/RM/RepeatMasker.html Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sap
AC025921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 64271)

Birren,B., Linton,L., Nusbaum,C. and Lander,E.

Homo sapiens, clone RP11-23F24
                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG; HTGS PHASEO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC025921.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17682 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 64271)
Contact: sequence_submissions@genome.wi.mit.edu
                                                   Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5921 64271 bp DNA linear HTG 13-JUL-2000
Bapiens clone RP11-23F24, LOW-PASS SEQUENCE SAMPLING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="BACR04F06 (D1057) RPCI-98 04.F.6"
/clone lib="RPCI-98 (Roswell Park Cancer Institute Drosophila melanogaster BAC library, partial EcoRI pBACe3.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/mol_type="genomic DNA"
/strain="y; cn bw_sp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                            Zainoun, J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          map="41C-41C"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:7227"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13292 c 12914 g 16693 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .63781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34.6%; Sur
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3200 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 63781;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۳.
ت
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
* NOTE: This record contains 77 individual
* sequencing reads that have not been assembled into
contigs. Runs of N are used to separate the reads
* and the order in which they appear is completely
arbitrary. Low-pass sequence sampling is useful for
identifying clones that may be gene-rich and allows
overlap relationships among clones to be deduced.
* However, it should not be assumed that this clone
will be sequenced to completion. In the event that
the record is updated, the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the record
be preserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center project name: L4356
Center clone name: 23_F_24
                                       15044
15874
16590
16690
17419
17519
17519
17519
179193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
19193
                                                                                                                                                                                                                                                                                                                                                                       9057
9157
9907
10007
10743
10843
11587
11687
11687
112414
12514
13254
143354
14101
14201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1681
                                                                                                                                                                                                                                                                                                                                                        15043
15773
                                                                                                                                                                                                                                                                                                                                                                                       14943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1168
                                                                                                                                                                                                                                                                                                                                           15873
                                    gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap c
                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                            gap conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap o
conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                     gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                     gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap o
conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap
                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                        100 bb 10
                                                    100 bp
100 735
100 bp
of 739
100 bp
of 731
100 bp
of 751
100 bp
of 754
100 bp
of 754
100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 756
100 bp
        ďď
                                     ďď
                                                                   ď
                                                                                                  ģ
                                                                                                                                ďď
                                                                                                                                                                                             ďď
                                                                                                                                                                                                                           đđ
                                                                                                                                                                                                                                                          đđ
                                                                                                                                                                                                                                                                                         ď
                                                                                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                   ďq
                                                                                                                                                                                                                                                                                                                                                                                                                                                  đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bp in length
        ä
                                       'n
                                                                                                                                                                                                                                                                                         'n
                                                                                                                                Ħ
                                                                                                                                                              in
                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                                       'n
                                                                   ä
                                                                                                  ä,
                                                                                                                                                                                             in
                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                                   in
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
        length
                                    length
                                                                 length
                                                                                                 length
                                                                                                                              length
                                                                                                                                                            length
                                                                                                                                                                                          length
                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
 35066
35906
35906
367650
367650
37568
39224
41630
41630
41730
41730
42473
42473
43419
43419
43419
434167
44979
44979
44979
44979
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
45919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
55919
559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32457
32557
33292
33392
34118
34218
34966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30803
30903
31634
31734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29967
30067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27575
28317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25889
26635
26735
27475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24973
25073
25789
53351:
53451:
54214:
54314:
55046:
55146:
                                                                                          52505:
52605:
                                                                                                                                        51657:
                                                                                                                                                         50893:
                                                                                                                                                                                                                                                                                                                                                                15818:
                                                                                                                                                                                                                                                                                                                                                                                15078:
                                                                                                                                                                                                                                                                                                                                                                                                 14978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30066:
30802:
                          contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                           gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                               conti
                                                                                                                                                                                                                                                                                                                                                                                                                             gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap
                                                                                                                                                                                                                                                                                                               gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cont i
                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                              . 100 br
                                                         100 bp
                                                                                                       100 bp
                                                                                                                                                                      100 bp
of 750
                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                               100 bp
of 718
                                                                                                                                                                                                                                                                                                                                                              100 bp
of 740
                                                                                                                                                                                                                                                                                                                                                                                              100
of 7
                                                                                                                                                                                                                                                                                                                                                                                                                             100 bp
of 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100 bp
of 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 744
100 bp
of 718
100 bp
of 728
100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 bp
of 748
                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100 bp
of 740
                            100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100 bp
of 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       735
735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ď
           þ
                                          фþ
                                                                        đq
                                                                                                      ď
                                                                                                                                     ďď
                                                                                                                                                                    ď
                                                                                                                                                                                                  ģ
                                                                                                                                                                                                                                 ď
                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                å
                                                                                                                                                                                                                                                                                                                             ф
                                                                                                                                                                                                                                                                                                                                                              đđ
                                                                                                                                                                                                                                                                                                                                                                                            ď
                                                                                                                                                                                                                                                                                                                                                                                                                          ďq
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         햠
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ģ
                                            ä
                                                                          in
                                                                                                      ij
                                                                                                                                       in
                                                                                                                                                                    ä
                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                    ä
                                                                                                                                                                                                                                                                ä.
                                                                                                                                                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                              in
                                                                                                                                                                                                                                                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     בו
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
           length
                                          length
                                                                      length
                                                                                                      length
                                                                                                                                   length
                                                                                                                                                                   length
                                                                                                                                                                                                  length
                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lengt}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
```

밁

```
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 18
AC018480/c
                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                   Laboratory, MS 64-121, Berkeley, CA 94720, USA
Laboratory, MS 64-121, Berkeley, CA 94720, USA
Dec 21, 1999 this sequence version replaced gi:6563452.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive web site (http://www.fruitfly.org/sequence/) or send email to bdggefruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently consists of 60 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence will be accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75162 bp DNA linear HTG 21-DEC-1999 Drosophila melanogaster chromosome 2 clone BACR04P15 (D1210) RPCI-98 04.P.15 map 41C-41C strain y; cn bw sp, *** SEQUENCING IN PROGRESS ***, 60 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18;
                                                                                                                                                                                                                                                                                                                                                                            Gelniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harriss, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Paccleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pactleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Arthropoda; Hexapod Neoptera; Endopterygota; Diptera; Brach Ephydroidea; Drosophilae; Drosophila.

1 (bases 1 to 75162)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTG; HTGS_PHASE1.
Drosophila melanogaster (fruit fly)
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished 2 (bases 1 to 75162)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC018480.2 GI:6623916
                                                                                                                                                                                                                                                                                                                                                                         Direct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGTTCTCTCACGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGTTCTCTCACGCTCT 43908
                                                                                        as soon as it
be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55147
55882
55982
56729
56829
57571
57671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
       510
590
1120
1200
                                                                                                                                                                                                                                                                                                                                                                       Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55881:
55981:
56728:
56828:
57570:
57670:
584115:
 509: contig of 509 bp in length 589: gap of unknown length 1119: contig of 530 bp in length 1199: gap of unknown length 1740: contig of 541 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig
gap of
contig
gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g of 735 bp
f 100 bp
g 100 747 bp
f 100 bp
g of 742 bp
f 100 bp
g of 745 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        745 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DВ
38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ם
נ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 64271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                  98609
9901
10571
10392
11472
11392
112058
12058
12058
12058
12508
12508
115508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
16508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4790
5337
5417
5714
5794
6356
6436
7019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7490
7570
8013
8093
8529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1741
1821
2369
2449
2956
                                                                                                       31678:
33076:
33156:
                                                                                                                                                                                                                                                                                                                                                   2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11471
11977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9900:
10570:
10650:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12057
                                                                                       34906:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7569
8012
8092
8528
8608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4789
5336
5416
5713
5793
6355
6435
7018
                                                contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
gap of
contig
gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig gap of contig gap of contig gap of contig gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              conti
                                                                                                                                                                                                                                                                                                                                                                                                                          of unknown length
of gof 1074 bp in length
of unknown length
ig of 1095 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               f unknown lengt...
f unknown length
' "nknown length
' "le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  if unknown length
ig of 562 bp in length
improvement length
inknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     f unknown lengt...
g of 391 bp in ler
menown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f unknown length
of 587 bp in length
if unknown length
g of 465 bp in length
g of 465 bp in length
f unknown length
of 634 bp in length
of in length
if unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      f unknown length
g of 534 bp in length
f unknown length
g of 593 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             f unknown length
g of 548 bp in le
f unknown length
                                                                                                                                                                                                                                                                                                                                                              f unknown lengt
g of 1524 bp in
f unknown lengt
g of 687 bp in
                                                                                                                     t unknown
g of 1130
f unknown
g of 1398
                                                                                                                                                                                       of 1123
of 2058
unknown
of 1862
unknown
                                                of 1398
unknown
of 1750
unknown
of 1716
                                                                                                                                                                                                                                                              unknown
of 2446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown le
of 648 bp
                                                                                                                                                                                                                                                                                            unknown length
of 1141 bp in length
unknown length
of 2285 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 506 bp in lounknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown length
of 741 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown length
of 1212 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown lengt
of 436 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown length
of 443 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 583 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
of 297 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 728 bp in length unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 670 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 547 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 507 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                          5 bp in length n length 6 bp in length
                              bp in 1
length
bp in 1
length
                                                                                                   bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                   bp in length
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                      bp in length
                                                                                                                                                                                         bp in length
                                                                                                                                                                                                                         bp in length
                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in length
                                                in length
                                                                                   in length
                                                                                                                     in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                 length
                length
```

```
VERSION
KEYWORDS
                                                                     AC010568/c
                                                                                                                                          밁
                                                                                                                                                                 S
                               ACCESSION
                                                        DEFINITION
                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                RESULT 19
                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                            Matches
                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                     65558 CATCGCTCGTCGCTGC 65541
                                                                                                                                                       21 CATCGCTCTCGTCGCTGC
                                                                                                                                                                                              18;
                                      Drosophila melanogaster clone RPC198-1716, PROGRESS ***, 43 unordered pieces.
              AC010568
AC010568.5 GI:8101320
                                                                      AC010568
                                                                                                                                                                                                                                                                 19287 a
HTGS_PHASE1
                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             70545
70625
71162
711242
71819
71899
72369
72369
73063
73143
73164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67668
67748
68310
68390
68996
69076
69608
69688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38725
41285
417285
44736
44736
44791
45937
47877
47877
47877
47877
47877
50355
504943
54963
58705
58705
58705
62373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69987
                                                                                                                                                                                                                                                                             pBACe3.6"
                                                                                                                                                                                                                                                                                    /clone="BACR04P15 (D1210) RPCI-98 04.P.15"
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
Drosophila melanogaster BAC library, partial EcoRI in
                                                                                                                                                                                                                                                                                                                                                                           /organism="Drosophila melanogaster"
/mol_type="genomic_DNA"
/strain="y; cn_bw_sp"
                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                  chromosome="2"
                                                                                                                                                                                                                                                                                                                                                            db_xref="taxon:7227"
                                                                                                                                                                                                                                                               15828 c
                                                                                                                                                                                                                                                                                                                                                                                                                                       71898: gap of unknown length
72368: contig of 470 bp in length
72448: gap of unknown length
73462: contig of 614 bp in length
73142: gap of unknown length
73763: contig of 621 bp in length
73763: contig of 621 bp in length
74543: contig of 700 bp in length
74623: gap of unknown length
74623: gap of unknown length
75162: contig of 539 bp in length
                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70624:
71161:
71241:
71818:
                                                                                                                                                                                                                        34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69906:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68309:
68389:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46016: gap of unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4: gap of unknown length
2: contig of 4428 bp in length
2: gap of unknown length
4: contig of 3762 bp in length
4: gap of unknown length
4: gap of unknown length
7: contig of 5388 bp in length
7: contig of 55215 bp in length
7: contig of 5215 bp in length
7: contig of 562 bp in length
9: contig of 562 bp in length
9: contig of 562 bp in length
5: contig of 606 bp in length
5: gap of unknown length
6: contig of 606 bp in length
7: gap of unknown length
6: contig of 606 bp in length
6: contig of 532 bp in length
6: contig of 519 bp in length
6: contig of 219 bp in length
6: contig of 519 bp in length
6: contig of 519 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown length
contig of 558 bp in length
gap of unknown length
contig of 537 bp in length
gap of unknown length
gap of unknown length
                                                                                                                                                                                                                                                               15319 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
gap of
contig
                                                                                                                                                                 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
contig
                                                                                                                                                                                            0
                                                                                                                                                                                                           Score 18; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig of 1860
                                                                   99277 bp
                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 1121 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 2480 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 2398 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                               19977 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 3451 bp in
                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                               4751 others
                                                                                                                                                                                                                   Length 75162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                  linear
                                                     SEQUENCING
                                                                HTG 29-MAY-2000
                                                                                                                                                                                         0
                                                                                                                                                                                      Gaps
                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
       10768
10868
16334
16434
28334
28434
30670
33571
33671
                       33670:
                                 33570:
                                               30769:
                                                             30669:
```

```
Bodota, B., Bouck, J., Bowie, S., Brooks, A., Buhay, C., Bunac, C.,
Burkett, C., Burrows, J., Carter, M., Chacko, J., Chen, Z., Cox, C.,
David, R., Delgado, O., Deshazo, D., Ding, Y., Domah-Rashid, N.,
Dugan-Rochas, S., Durbin, K. J., Fernandez, C., Ferraguto, D.,
Forcum-Tansey, J., Frantz, P., Ganesh, R., Gorrell, J. H., Gorrell, L.L.,
Guevara, W., Harris, K., Hernandez, J., Hodgson, A., Hogues, M.,
Holloway, C., Hosak, H., Jackson, L.E., Jackson, L., Jia, Y., Jones, M.,
Kelly, S., Kondejewski, N., Kong, Y., Kovar, C., Leal, B., Li, Z.,
Lichtarge, O., Liu, J., Liu, W., Logan, O., Lozado, R. J., Lu, J.,
Lucier, R., Martin, R., Martinez, C., McLeod, M.P., Mei, G., Morgan, M.,
Morris, S., Nash, S., Nelson, A., Nguyen, R., Nguyen, N., Nguyen, S.,
Ouiles, M., Reiter, D., Rives, M., Samuel, S., Say, J., Scherer, S.,
Shah, E., Shen, H., Simon, M., Sparks, A., Stamps, A., Suegang, R.,
Tabor, P., Taylor, T., Vasguez, L., Vinson, R., Vo, Q., Wahbah, M.,
Worley, K., Wren, J., Wrensford, G., Yu, W., Zhou, X., Nelson, D. and
Gibbs, R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (16-SEP-1999) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On May 29, 2000 this sequence version replaced gi:6996776.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Meoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 99277)

Muzny,D.M., Adams,C., Bailey,M., Barbaria,J., Blankenburg,K., Bodota,B., Bouck,J., Bowie,S., Brooke,A., Buhay,C., Bunac,C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster (fruit fly)
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOTE: This is a 'working draft' sequence. It currently consists of 43 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequencing vector: M13; L08821
Chemistry: Dye-primer Bodipy: 14% of reads
Chemistry: Dye-terminator B1g Dye: 45% of reads
Assembly program: Phrap; version 0.980611
Consensus quality: 69137 bases at least Q40
Consensus quality: 82549 bases at least Q30
Consensus quality: 89824 bases at least Q30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 99277)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center project name: DRFQ Center clone name: RPCI98-1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Web site: http://www.hgsc.bcm.tmc.edu/Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality coverage: 2.8x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center: Baylor College
Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----- Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----- Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - Genome Center
                                                                                                                                                                                           10867:
16333:
16433:
28333:
28433:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10767:
7: contig of 10767 bp in length
7: gap of unknown length
3: contig of 5466 bp in length
3: gap of unknown length
3: contig of 11900 bp in length
3: contig of 2136 bp in length
9: contig of 2236 bp in length
9: gap of unknown length
9: gap of unknown length
0: contig of 2801 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of Medicine
```

gap of unknown contig of 2868 l

length bp in length

of 2180

g

```
70494
803111
803111
803111
811494
82884
82884
82884
82884
82884
82753
84753
87753
87753
87753
87753
87753
87753
                                                                                                                                                                                                                                                                                                                                           38918: gap of 40501: contig 40501: gap of 45526: gap of 45526: gap of 45526: gap of 47526: contig 447755: contig 447755: contig 447755: gap of 51574: gap of 51574: gap of 51574: gap of 60281: gap of
                                                                                                                                                                       unknown
of 1303
funknown
y of 1208
unknown
y of 1216
unknown
y of 1216
unknown
y of 1200
unknown
g of 1200
                                                                                         of 1077
unknown
of 1005
                                                                                                                                      of 1188
unknown
of 1350
                                                                                                                                                                                                           of 1926
unknown
of 1683
unknown
of 1060
                                                                                                                                                                                                                                                                              t unknown
of 1483
unknown
of 1415
unknown
of 1717
unknown
of 1183
of 1183
unknown
                                                                                                                                                                                                                                                                                                                                                                                                 f unknown
g of 2045
f unknown
g of 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 f unknown
g of 2056
unknown
g of 1995
unknown
f unknown
f unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    f unknown
of 1856
unknown
of 2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 1675
unknown
of 1944
unknown
of 1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 1223
unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
of 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
of 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
of 2129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
of 3041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
of 1583
                                                                                                                                                                                                                                                                      unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                               of 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                           length
by in length
n length
p in length
        n length
by in length
n length
o bp in length
the length
n length
                                                                 n length

bp in length

n length

bp in length

length

n length

n length
                                                                                                                                                                                  h length
bb in length
h length
bb in length
h length
h length
h length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             h length
h length
h length
b in length
length
h length
h length
h length
h length
h length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
bp in length
length
pp in length
                                                                                                                                                                                                                                                                                                                                                                                               length
bp in length
length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
bp in length
length
bp in length
                                                                                                                                      length
bp in ]
                                                                                                                                                                                                                                                                                                                                                                         length
bp in ]
                                                                                                                                                                                                                                                                                                                                                                                                                                              length
bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
bp in ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
bp in
                                                                                                                                                            length
bp in length
                                                                                                                                                                                                                                                        length
bp in length
                                                                                                                                                                                                                                                                                                    length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              đđ
                                                                                                                                                                                                                                                                              length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in length
                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
```

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 20
AC008227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster (fruit fly)

Drosophila melanogaster (fruit fly)

Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ehhydroidea; Drosophildae; Drosophila.

CE 1 (bases 1 to 101579)

Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,

Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,

Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,

Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,

Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P.,

Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,

Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E.,

Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and

Romnardia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21 CATCGCTCTCGTCGCTGC 38
           Direct Submission

Submitted (29-JUL-1999) Drosophila Genome Center, Lawrence Berkeley

Laboratory, MS 64-121, Berkeley, CA 94720, USA

On Aug 2, 1999 this sequence version replaced gi:5649193.

Por further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently

* consists of 56 contigs. The true order of the pieces

is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                           Gelniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Madda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L., Spir, R., Stirkas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L., Spir, R., Stirkas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L., Spir, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC008227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster chromosome 05.0.8 map 84D-84D strain y; cn bw
                                                                                                                                                                                                                                                                                                                                             Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC008227.2 GI:5670434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC008227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
arbitrary. Gaps between the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCGCTCTCGTCGCTGC 35842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34.6%;
milarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly fragment:contig36; vector:Vector_pBACe3.6;
vector_side:right"
a 19521 c 18383 g 28965 t 4226 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type="genomic DNA"
/db_xref="taxon:7227"
/clone="RePC198-1716"
complement(26106. .26205)
/note="assembly fragment:contig25; vector:Vector_pBACe3.6;
vector_side:left"
41196. _41295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 to 101579)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . .99277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 18; DB; Pred. No. 37; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101579 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
ne 3 clone B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 99277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear HTG 20-SEP-1999
BACR05008 (D822) RPCI-98
SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kearney, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
      4436
4516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1191
1271
1809
1889
2484
2564
3226
3306
3829
3909
      30394:
31753:
31833:
31974:
33154:
35326:
35426:
35426:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
35526:
37573:
37573:
37573:
                                                                                                                                                                                                                                             23825:
23905:
25283:
                                                                                                                                                                                                                                                                                                              21081:
21161:
                                                                                                                                                                                                                                                                                                                                                                                16782
17607
                                                                                                                                                                                                                                                                                                                                                                                                        16702
                                                                                                                                                                                                                                                                                                                                                                                                                                                9603:
10537:
10617:
11429:
11509:
12209:
12289:
12289:
12938:
13018:
14201:
14281:
                                                                                                                                                                                                                  gap of contig gap of contig gap of contig gap of contig
     contig
gap of
contig
                                                                                                                                                                                                                                                                                                                         gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                              gap of
                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                        gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of unknown length contig of 583 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contig of 521 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig of 589 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of unknown
                                                                                                                                                                                                              of unknown length
g of 1322 bp in length
of unknown length
ig of 1992 bp in length
ig of 1992 bp in length
ig of 1372 bp in length
of unknown length
of unknown length
ig of 1272 bp in length
ig of 1278 bp in length
ig of 1378 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of unknown length
g of 689 bp in length
of unknown length
g of 659 bp in length
of unknown length
of unknown length
g of 934 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of unknown length
g of 639 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g of 952 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g of 595 bp
                                                        unknown
of 2172
unknown
of 2167
                                                                                                                                                                                        of 1454
unknown
unknown
of 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown lei
g of 812 bp :
                                                                                                                                                                unknown
of 1319
                                                                                                            unknown
of 1241
                                                                                                                                     of 1359
                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 1508 bp in length
unknown length
of 825 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 1086 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 1183 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown le
of 649 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
of 700 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                    of 833 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
                                             unknown
                                                                                                                                                                                     4 bp in length n length 8 bp in length
                          bp in length
n length
7 bp in length
n length
n length
p bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
in length
                                                                                                          length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
bp in length
     ďď
                                                                                                                                   length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
bp in length
                                                                                length
bp in
                                                                                                                                                           length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
p in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in length
     in length
                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                         length
                                                                                                                                  length
                                                    RESULT 21
AC098797
LOCUS
 ACCESSION
VERSION
                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                       В
                                                                                                                                            á
                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                  Query Match
Best Local S
                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                    67542
                                                                                                                                              21
                                                                                                                                                                      ch 34.6%; So 1 Similarity 100.0%; I 18; Conservative 0;
            AC098797
Leishmania major chromosome 35
complete sequence.
AC098797
 AC098797.3
                                                                                                                    CATCGCTCTCGTCGCTGC
                                                                                                                                     CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                41518
41529
414827
44827
44827
448200
483200
483200
52204
67724
67724
67724
67724
67724
97251
92278
92278
92278
93028
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93108
93
                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                      /map="84D-84D"
/clone="BACR05008 (D822) RPCI-98 05.O.8"
/clone="BACR05008 (Roswell Park Cancer Institute
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
Drosophila melanogaster BAC library, partial EcoRI
pBACe3.6"
a 20734 c 19813 g 27246 t 4409 others
                                                                                                                                                                                                                                                                                                                                /organism="Drosophila melanogaster"
/mol_type="genomic DNA"
/strain="Y; cn bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
l. .101579
GI:18139378
                                                                                                                                                                                                                                                                                                                                                                                                                                    99515: gap of unknown length
100107: contig of 592 bp in 10
100187: gap of unknown length
100895: contig of 7008 bp in 10
                                                                                                                                                                                                                                                                                                                                                                                                            100975: gap of unknown length 101579: contig of 604 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98805:
98885:
99435:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97299:
98072:
98152:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93107:
93732:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59818:
67723:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52283:
59738:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91617:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91537:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1: gap of unknown 2: contig of 625 bp in length
2: contig of 625 bp in length
30: contig of 568 bp in length
60: gap of unknown length
99: contig of 739 bp in length
99: contig of mknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contry continue of J84 bp in le contig of J84 bp in length
                                                                                                                    67559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of unknown length
contig of 4867 bp in length
gap of unknown length
contig of 18787 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     conti
                                                                                                                                                                                  Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of unknown length
tig of 645 bp in length
of unknown length
ntig of 751 bp in length
"wknown length" length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of unknown length
tig of 670 bp in length
of unknown length
tig of 625 bp in length
                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of unknown length
ig of 773 bp in length
of unknown length
ig of 653 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
of 3413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
of 7905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
of 7455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
of 3884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 3149
                                    clone LB01304 strain
                                                                                                                                                                                 DB
37;
                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
bp in length
                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                        in length
                                                                                                                                                                      ..
                                                                                                                                                                                               Length 101579;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                      Indels
                                                   linear
                                     Friedlin,
                                                 INV 01-JAN-2003
                                                                                                                                                                    ,
,
                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                ä
```

0

Blazej, R.G.,

and

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 22
AC009746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                        รถวดา
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98830 TCATCGCTCTCGTCGCTG 98847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (01-JAN-2003) Seattle Biomedical Research Institution,
Nickerson Street, Seattle, WA 98109-1651, USA
On Jan 12, 2002 this sequence version replaced gi:17017563.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                         AC009746 123010 bp DN Drosophila melanogaster chromosome 2 RPCI-98 03.D.4 map 40D-40D strain y; PROGRESS ***, 80 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG.
Leishmania
  Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciescolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R.,
                                                                                                                                                                                                         AC009746.10 GI:7264757
HTG; HTGS PHASE1.
Drosophila melanogaster (fruit fly)
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (12-JAN-2002) Seattle Biomedical Research Institution, Nickerson Street, Seattle, WA 98109-1651, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (20-NOV-2001) Seattle Biomedical Research Institution, Nickerson Street, Seattle, WA 98109-1651, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Myler,P.J., Sisk,E., Nelson,S., Mack,J., Vogt,C., Robertson,L., Worthey,L., Ivens,A., Marty,A., Munden,H., Stuart,K., Rinta,J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Myler, P.J., Sisk, E., Nelson, S., Worthey, L., Ivens, A., Marty, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Myler, P.J., Sisk, E., Nelson, S., Worthey, L., Ivens, A., Marty, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nickerson Street, Seattle, WA
2 (bases 1 to 117714)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (01-NOV-2001) Seattle Biomedical Research Institution,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Myler,P.J., Sisk,E., Cawthra,J., Handley,F., Vog
McDonagh,P., Ivens,A., Nguyen,D., Munden,H. and
                                                                                                                                             Eukaryota; Metazoa; Arthropoda; Hexapoda; Ins
Neoptera; Endopterygota; Diptera; Brachycera;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nickerson Street, Seat
3 (bases 1 to 117714)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Leishmania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Geishmania.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATCGCTCTCGTCGCTG 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22292
                                                                                                                       (bases 1 to 123010)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 117714)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Leishmania major"
/mol type="genomic DNA"
/strain="Friedlin"
/db_xref="taxon:5664"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chromosome="35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone="LB01304"
34596 c 33718 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98109-1651, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mack, J., Vogt, C., Robertson, L., Munden, H., Stuart, K., Rinta, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mack, J., Vogt, C., Robertson, L., Munden, H., Stuart, K., Rinta, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 3;
37;
                                                                                                                                                                                                                                                                                                                                          DNA
ne 2 clone B/
cn bw f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 117714;
                                                                                                                                                                Insecta; Pterygota;
era; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                       BACR03D04 (D1041)
sp, *** SFO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vogt, C., Robertson, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stuart, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Laboratory, NS 64121, Berkeley, CA 94720, USA
On Mar 20, 2000 this sequence version replaced gi:7105464.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently
consists of 80 contigs. The true order of the pieces
is not known and their order in this sequence record is
arbitrary. Gaps between the contigs are represented as
runs of N, but the exact sizes of the gaps are unknown.
This record will be updated with the finished sequence
as soon as it is available and the accession number will
be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N. L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. Swirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. Swirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Moshrefi,M., Nixon,K., Pacleb,J.M., Park,S., Pfeiffer, Richards,S., Sethi,H., Svirskas,R.R., Wan,K.H., Webste Woolley,P., Yang,S., Yee,M., Yu,C. and Rubin,G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (31-AUG-1999) Drosophila Genome Center, Lawrence Laboratory, MS 64-121, Berkeley, CA 94720, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 123010)
                       8456
111270
115064
115064
115194
118594
118674
22266
22266
2227451
27451
27451
27451
27451
27531
33694
48591
48591
48591
48591
48591
48591
70781
70781
70781
70781
70781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2235
2977
2977
3057
3885
3965
4689
4769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            497
577
975
1055
1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submission
                                                                                                                                                                                                                                48557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15063
15143
                                                                                                                                                                                                                                                                            40510:
                                                                                                                                                                                                                                                                                                                                                 27530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18593
                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig gap of contig gap of contig gap of contig gap of gap of contig gap of co
                                           gap of contig gap of contig
                                                                                                                gap of contig gap of contig gap of contig gap of gap of contig gap of
                                                                                                                                                                                                                                                                                                                    gap of contig gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                         gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of unknown le
                     gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown length contig of 658 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig of 496 bp in length gap of unknown length
  contig
                                                                                                                                 f unknown length
g of 11553 bp in
f unknown length
g of 10510 bp in
                                                                                                                                                                                                                            of 6737
tunknown
of 7967
                                                                                                                                                                                                                                                                                                                                                               unknown
of 5105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
of 3794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown
of 2734
of 719 bp in 1 unknown length of 601 bp in 1
                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown lengt
of 724 bp in
                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                       of 6163
                                                                                                                                                                                                                                                                                                                                               unknown
                                                                                                                                                                                                                                                                                                                                                                                                             of 3592
                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 3450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 3607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 828 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 742 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 398 bp
                                                                                                                                                                                                                                                    3 bp in 1000
wn length in length
                                                              length
                                                                                                                                                                                                                            ġ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                            bp in :
length
                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp in length
                                                                                                                                                                                                                                                                                                                                                                                                             ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Karra, K., Kearney, L.,
                                                                                                                                   length
                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           webster, D.,
```

length

length

length length length length

```
87460: gap of unknown length
88033: contig of 493 bp in length
88033: gap of unknown length
88043: gap of unknown length
89377: contig of 734 bp in length
99070: contig of 734 bp in length
99073: contig of 673 bp in length
99130: gap of unknown length
99153: gap of unknown length
99153: gap of unknown length
991541: contig of 677 bp in length
992643: contig of 677 bp in length
992643: contig of 677 bp in length
992640: contig of 677 bp in length
99260: gap of unknown length
99270: contig of 677 bp in length
99270: gap of unknown length
99270: contig of 580 bp in length
99270: contig of 580 bp in length
99270: gap of unknown length
99270: contig of 746 bp in length
99270: contig of 580 bp in length
99270: contig of 747 bp in length
99270: contig of 580 bp in length
100357: gap of unknown length
100366: gap of unknown length
100469: gap of unknown length
100469: gap of unknown length
100469: gap of unknown length
1004600 gap of unknown length

gap of unknown length
contig of 513 bp in 1
gap of unknown length
contig of 236 bp in 1

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of unknown contig of 788 l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o
E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      f 513 bp 1..
f square length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              694 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                805 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 23
AC105442/c
LOCUS
                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 18
                                                                                                                                                                       TITLE
                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30732 CATCGCTCTCGTCGCTGC 30749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18;
Submitted (05-JAN-2002) Seattle Biomedical Research Institution, Nickerson Street, Seattle, WA 98109-1651, USA On Jan 29, 2002 this sequence version replaced gi:18071338.

* NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

* This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                       AC105442

124612 bp DNA linear HTG 29-JAN-2002

Leishmania major chromosome 35 clone LB00329 strain Friedlin, ***
SEQUENCING IN PROCRESS ***, 3 ordered pieces.
                                                                                                                                                                                                                                                                 HTG; HTGS_PHASE2.
Leishmania major
                                                                                                                                                                                                 Leishmania.
1 (bases 1 to 124612)
Myler,P.J., Sisk,E., Mack,J., Nelson,S., V.
Myrthey,L., Ivens,A., Marty,A., Munden,H.,
                                                                                                                                                                                                                                                                                                                                         AC105442.2 GI:18390199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116563
116643
116858
116938
117575
117655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110923
111716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110026
110106
110515
110595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 108974
109637
109717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       115331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         114854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            114150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110843
                                                                                                                                                                       Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117654:
118239:
118319:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118709:
119196:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109636:
109716:
110025:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116104:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        116857:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116562:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116184:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114853:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118629:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116642:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            114773:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              112370:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110842:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of gap of gap of gap of gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig gap of gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 18; DB; Pred. No. 37; O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             p of unknown length
ntig of 215 bp in len
p of unknown length
ntig of 637 bp in ler
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            f unknown length
g of 623 bp in length
winknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f unknown length
g of 732 bp in length
winknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    f unknown length gof 544 bp in ler f unknown length gof 397 bp in ler f unknown length gof 774 bp in ler f unknown length f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              f unknown length
g of 487 bp in le
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown le
of 378 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 663 bp
unknown le
of 309 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 310 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown lengt
of 264 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown lengt
of 793 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown lengt
of 409 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 495 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 248 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ב
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 123010;
```

length

<u>.</u>

Gaps

0

length

length length length length

length

length

length

length

91731 91811 92844 92924 93541 93621 94201

89458 90051 90131 90974 91054

88644 89378

86667 86687 87381 87461 87954 88034 88634

84854 84934 85722 85802

83945 84025 84538 84618

94681 94725 94725 94725 953201 953201 953201 953201 95306 96406 96406 96705 96701 97614 97614 97614 97610 98758 98

Vogt,C., Robertson,L., ., Stuart,K., Seyler,A.

and

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC009843/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105161 TCATCGCTCTCGTCGCTG 105144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Metazoa; Arthropoda; Brachycera; Muscomorpha; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

E 1 (bases 1 to 127091)

S Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirakas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
Submitted (03-SEP-1999) Drosophila Genome Center, Lawrence Berk Laboratory, MS 64-121, Berkeley, CA 94720, USA On Feb 28, 2000 this sequence version replaced gi:6980150. For further information about this sequence, including its loca and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send em to bdgp@fruitfly.berkeley.edu.All cfly.org/sequence/) or send em the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently consists of 93 contigs. The true order of the pieces
                                                                                                                                                                                                                                                                                       Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej Butenihef, C., Champe, M., Chavez, C., Chew, M., Classiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L. Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearne Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, M., R., Moshrefi, M., Nixon, K., Peacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirks, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC009843 127091 bp DNA Drosophila melanogaster chromosome 3 clone RPCI-98 01.G.11 map 80B1-80D2 strain y; cn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG; HTGS_PHASE1.
Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC009843
AC009843.7 GI:7107697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROGRESS ***,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCATCGCTCTCGTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103781
103931
106087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 127091)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the finished sequence as soon as it is available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                 Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Leishmania major"

/mol type="genomic DNA"

/strain="Friedlin"

/db_xref="taxon:5664"

/chromosome="35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="LB00329"
35011 c 36514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .124612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ion number will be preserved.
103780: contig of 103780 bp in length
103930: gap of unknown length
106086: contig of 2156 bp in length
106236: gap of unknown length
124612: contig of 18376 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36514 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23576 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 124612;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BACROIGII (D1045)
bw sp, *** SEQUEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                            Zieran, L.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  *** SEQUENCING IN
                                                                                                                                                                                                                                                                                                                                          Park,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HTG 28-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                         Kearney, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blazej, R.G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                  its location
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                        Berkeley
                                                                                                    emai]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

망 ş

```
is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as soon as it is available and the accession number will be preserved.
 20878
22422
22502
23478
23459
24590
24590
254620
254620
26700
27922
                                                                                                      4898
4978
5420
5500
                                                                                                                                                                                                                                                                                                                                                                                                                                   3574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          563
643
1277
1357
1984
2064
2314
                                                                                               19355
20073
20153
20197
20797
20877
22421
                                                                                                                                                                                                                                                            11987:
12067:
12786:
12866:
13456:
                                                                                                                                                                                              15574:
15654:
16170:
                                                                                                                                                                                                                     15065:
15145:
                                                                                                                                                                                                                                                                                                    9289:
9981:
10061:
11200:
11280:
                                                                                                                                                                              16250:
16868:
                                                                                                                                              19275:
                                                                                                                                                                                                                                                                                                                                                                                            5499
6471
                                                                                              gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                          gap of gap of contig
                                                                                                                                                                                                                                                                                                                                                                                           contig
gap of
contig
                                                                                                                                                                                             gap of contig gap of contig gap of contig gap of
                                                                                                                                                                                                                                                                            gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                            gap of
contig
                                                                                                                                                                                                                                                            gap of
contig
                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap
                                                                                                                                                                                                                                                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
                                                                                                                                                                                                                                                                                                                                                                              ي درنا
f unknown Lewy-
g of 972 bp in len
g of 972 bp in length
' a le
                                                                                                                                                                                                                                                                g of 719 bp in ler
                    unknow..
g of 1158 bp in to
                                                                                                                                                                                                                                                                                          g of 1139 bp in l
f unknown length
g of 707 bp in le
                                                                                                                                                                                             f unknown lengtl
g of 429 bp in
unknown lengtl
g of 516 bp in
of 1222 bp in
unknown length
of 958 bp in 1
                                                                                     of 1544 bp in l
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown lengt
of 627 bp in
                                               of 712 bp in
                                                              of 1032 bp
                                                                              unknown lengt
of 976 bp in
                                                                                                              of 644 bp in
                                                                                                                             of 718 bp in
                                                                                                                                       of 1483 bp in unknown length
                                                                                                                                                       unknown
                                                                                                                                                              unknown lengt
of 764 bp in
                                                                                                                                                                             unknown lengt
of 618 bp in
                                                                                                                                                                                                                            unknown lengt
of 652 bp in
                                                                                                                                                                                                                                            unknown lengt
of 797 bp in
                                                                                                                                                                                                                                                            unknown lengt
of 590 bp in
                                                                                                                                                                                                                                                                                                                           unknown lengt
of 692 bp in
                                                                                                                                                                                                                                                                                                                                           unknown lengt
of 925 bp in
                                                                                                                                                                                                                                                                                                                                                          unknown length
of 619 bp in le
                                                                                                                                                                                                                                                                                                                                                                           unknown lengt
of 954 bp in
                                                                                                                                                                                                                                                                                                                                                                                                          unknown length
of 442 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                           of 746 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                          of 498 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 548 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown lengt
of 472 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 250 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 634 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 562 bp in length
                                                        unknown
                                                                        unknown
                                                                                                      unknown
                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                              length
bp in length
                                                        length
                                                                                                                                              length
bp in length
                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                       length
                                                                                                                                                                      length
                                                                                                                                                                                     length
                                                                                                                                                                                                      length
                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                      length
                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                      length
                in length
                                                                                             in length
                                                                                                                                                                                                                                                                                                            in length
                                                              in length
                                                                                                                                                           length
                                                                                                                                                                                            length
                                              length
                                                                              length
                                                                                                             length
                                                                                                                             length
                                                                                                                                                                             length
                                                                                                                                                                                                            length
                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
```

length

```
905100
905100
905100
905100
93958
94038
11004632
11005234
1106631
1107068
1107068
11070768
11070768
11070768
11070768
11070768
11070768
11070768
11070768
11070768
11070768
11070768
11070768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29040
29040
30565
31645
31725
31725
31725
31725
31710
33110
33197
34979
34979
34153
34979
34163
34979
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
36163
34163
34163
34163
34163
34163
34163
34163
34163
34163
34163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54857
                                                                                                                                                                                          100461:
100541:
106233:
106313:
106987:
107067:
107780:
                                 107860:
108540:
108620:
109185:
109265:
109901:
                                                                                                                                                                                                                                                                                                                                                                                                              90429:
90509:
93957:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79726:
84818:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66453:
66533:
71049:
71129:
71129:
75699:
75779:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63824
63904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59609:
61234:
61314:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56265:
56345:
57715:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53046:
53126:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50928:
51008:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46674:
48005:
48085:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37188:
37268:
38152:
38232:
40088:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49697:
49777:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44695:
44775:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41888:
41968:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34898:
34978:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54936:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54856:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43642:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43562:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35877:
gap of unknown process of the state of the s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    secontig of 1709 by in length
gap of unknown length
contig of 819 by in length
contig of 813 by in length
contig of 1311 by in length
gap of unknown length
contig of 1856 by in length
gap of unknown length
contig of 1856 by in length
gap of unknown length
contig of 1720 by in length
gap of unknown length
contig of 1720 by in length
gap of unknown length
contig of 1654 by in length
contig of 1654 by in length
contig of 1654 by in length
contig of 1619 by in length
contig of 1819 by in length
gap of unknown length
contig of 1819 by in length
contig of 1730 by in length
contig of 1734 by in length
contig of 1735 by in length
contig of 1825 by in length
contig of 2510 by in length
contig of 2510 by in length
contig of 4570 by in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig of 1000 bp in gap of unknown length contig of 1385 bp in gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
contig
gap of
                                                                                                                                                           of unknown length
ig of 6424 bp in length
of unknown length
ig of 5692 bp in length
of unknown length
of unknown length
of of 674 bp in length
of unknown length
ig of 713 bp in length
ig of mixnown length
                                                  f unknown length g of 680 bp in le f unknown length g of 565 bp in le f unknown length
                               t unknown le
g of 636 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
of 1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 1000 bp in length
     length
                                                                                                                                                                                                                                                                                                                                                                                                            bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in length
                               length
                                                                               iength
                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
```

```
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 25
AC010915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Holt, R.A., Evans, C.A., Gocayne, J.D., Amanatides, P.G., Brandon, R.C., Rogers, Y., An, H., Baldwin, D., Banzon, J., Beeson, K.Y., Busam, D.A., Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.M., Dodson, K., Dorseett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Ferriera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Ibegwam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A., McIntosh, T.C., Moy, M., Murphy, B., Nelson, C., Nelson, K.A., Nunco, J., Paccleb, J., Paragas, V., Park, S., Patel, S., Pfeiffer, B., Phouanenawong, S., Pittman, G.S., Puri, V., Richards, S., Scheeler, F., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S.M., Saveri, J.S., Smith, H.O., Rubin, G.M., and Venter, J.C.
Sequencing of Drosophila chromosome 4, region 101f-102f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21
              Sequence submitted by:

Berkeley Drosophila Genome Project
Lawrence Berkeley National Laboratory, MS 64-121

Berkeley, CA 94720

This sequence was assembled using end sequences from a whole genome shotgun and from subclomes of this BAC and its neighboring clones. For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email
                                                                                                                                                                                                                                 Submitted (27-SEP-1999) Drosophila Genome Center, Lawrenc Laboratory, MS 64-121, Berkeley, CA 94720, USA On Jan 10, 2002 this sequence version replaced gi:7116216
                                                                                                                                                                                                                                                                                                                                                   Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M. A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pachleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neoptera; Endopterygota; Diptera; Brachycera; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 17841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster, chromosome BACR05L22, complete sequence.
to bdgp@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                       Rubin, G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC010915.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC010915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC010915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCGCTCTCGTCGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCGCTCTCGTCGCTGC 88472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 137841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109982
1110385
1110465
1111090
1111170
1111527
1111607
1112170
1112250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GI:18104814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      110384:
110464:
111089:
111169:
111526:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            112169:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112980:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112249:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111606:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig of 403 bp in length is gap of unknown length contig of 625 bp in length gap of unknown length is contig of 357 bp in length contig of 563 bp in length contig of 563 bp in length gap of unknown length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown length contig of 731 bp in length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137841 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 37;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 403 bp in lounknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ONA linear INV 10-JAN-2002
4, region 101F-102F, BAC clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 127091;
                                                                                                                                                                                                                                                                                     Lawrence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                   Berkeley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 26
AC134236/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            รกวดา
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
Direct Submission

Direct Submission

Submitted (21-DEC-2002) Arizona Genomics Institute, University of Arizona, 303 Forbes, Tucson, AZ 85721, USA

On Dec 21, 2002 this sequence version replaced gi:24270659.

This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >=30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by more than one plasmid subclone; and the assembly was confirmed by restriction digest. There are three areas of single-subclone: 54456-54560, 57568-57653 and 115543-115568. From base 133735-133753 there are only PCR reads. The assembly overlaps from 13009-162132 bases on OSJNBa0090010. The assembly overlaps is from base 136321-149349 with OJ1263H11 (accession # AC118980). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (japonica cultivar-group) chromosome 3 clone OSJNBa0056G13, complete sequence. AC134236.3 GI:27356674
HTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (24-SEP-2002) Arizona Genomics Institute, Arizona, 303 Forbes, Tucson, AZ 85721, USA 3 (bases 1 to 149349) wing,R.A., Yu,Y., Soderlund,C., Kim,H.-R., Rambo,T., Currie,J. and Collura,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiglantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
1 (bases 1 to 149349)
Ming,R.A., Yu,Y., Soderlund,C., Kim,H.-R., Rambo,T., Currie,J. and Collura,K.
                                                                                                                                                                                                                                                                                                                                                                           Arizona, 303 Forbes, Tucson, AZ 85721, USA
4 (bases 1 to 149349)
Wing, R.A., Yu, Y., Soderlund, C., Kim, H.-R., Rambo, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wing, R.A., Yu, Y., Soderl Currie, J. and Collura, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCGCTCTCGTCGCTGC 12432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 149349)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genomic Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster BAC library, partial EcoRI in
                                                                                                                                                                                                                                                                                                                                                                                                                             (23-OCT-2002) Arizona
103 Forbes, Tucson, AZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="BACR05L22 (D1068)"
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="101F-102F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /strain="y; cn bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /chromosome="4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Soderlund, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24261 g 43716 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                           Genomics Institute,
85721, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kim, H.-R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 3;
37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rambo, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rambo,T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   137841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 University
                                                                                                                                                                                                                                                                                                                                                                                  Currie, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saski, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saski,C.,
```

```
RESULT 27
AC009353/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RS Celniker, S.E. Adams, M.D., Kronmiller, B., Tyler, D., Wan, K.H.,
Rocayne, J.D., Amanatides, P.G., Brandon, R.C.,
Rolt, R.A., Evans, C.A., Gocayne, J.D., Amanatides, P.G., Brandon, R.C.,
Rogers, Y., An, H., Baldwin, D., Banzon, J., Beeson, K.Y., Busam, D.A.,
Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.M.,
Carlson, K., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D.,
Ferriera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A.,
Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J.,
Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J.,
Ibegwam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A.,
Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J.,
Ibegwam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A.,
McIntosh, T.C., Moy, M., Nurphy, B., Nelson, C., Walson, K.A., Nunco, J.,
Pacleb, J., Paragas, V., Park, S., Patel, S., Pfeiffer, B., Scheeler, F.,
Phouanenavong, S., Pittman, G.S., Puri, V., Richards, S., Scheeler, F.,
Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S.M.,
Zaveri, J. S., Smith, H.O., Rubin, G.M. and Venter, J.C.
Sequencing of Drosophila chromosome 2R, region 41E-41E
AL Unpublished (1998)
DE Colniver of Robert Achamia Accessor T. Barrer E. Blazeri B.G.
Colniver of Robert Achamia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        overlap
of this
Arizona
                                                                                                                                                                                                                                                                                                                                                      Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J. M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snit, E., Porn, L., Shit, E., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                           Submitted (17-AUG-1999) Drosophila Genome Center, Lawrence Laboratory, MS 64-121, Berkeley, CA 94720, USA On Dec 14, 2001 this sequence version replaced gi:7264782.
This sequence was assembled using end sequences from a whole genome shotgun and from subclones of this BAC and its neighboring clones. For further information about this sequence, including its location
                                                                                        Sequence submitted by:
Berkeley Drosophila Genome
Lawrence Berkeley National
Berkeley, CA 94720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster, chromosome BACR32F22, complete sequence.
                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC009353.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC009353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGCTCTCGTCGCTGCCG 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 157371)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is from 1-13028 bases on OJ1263H11. The nucleotide sequence BAC clone was generated by combining Syngenta, Monsanto, and Genomics Institute sequencing data.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="OSJNBa0056G13"
/note="(japonica cultivar-group)"
. 33572 c 33754 g 42403 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Oryza sativa
/mol_type="genomic DNA"
/db_xref="taxon:39947"
/chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34.6%; Score 18; DB
100.0%; Pred. No. 36;
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           157371 bp
                                                                                                                        Laboratory,
                                                                                                                                                     Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (japonica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
e 2R,
                                                                                                                           MS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 149349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              region
                                                                                                                           64-121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear INV
gion 41E-41E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-DEC-2001
BAC clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 28
AP003935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         40255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                          Agrobiological Resources, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-7441, Fax:81-298-38-7468)

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished agreement as it is a working draft sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oryza satīva (japonica cultivar-group)
Oryza satīva (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Em
Spermatophyta; Magnollophyta; Lillopsida;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (18-JUL-2001) Takuji Sasaki, National Institute of Agrobiological Resources, Rice Genome Research Program; Kanno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Published Only in Data
2 (bases 1 to 159581)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sasaki,T., Matsumoto,T. and Yamamoto,K. Oryza sativa nipponbare(GA3) genomic DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send ento bdgp@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sasaki, T., Matsumoto, T. and Yamamoto, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AP003935.1 GI:14915718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HTG; HTGS_PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AP003935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rect Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lone: P0661G04
                  43622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCGCTCTCGTCGCTGC 40238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCING
                                                                                                                                                                                       the finished sequence as soon as it a accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             935 159581 bp DNA linear HTG 21-MAR-2002 active (japonica cultivar-group) chromosome 6 clone P0661G04,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster BAC library, partial EcoRI
pBACe3.6)"
a 29939 c 31348 g 48335 t
                                                   /mol type="genomic DNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947"
/chromosome="6"
                                                                                                                               organism="Oryza sativa
                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="BACR32F22 (D910)"
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 map="41E-41E"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /strain="y; cn bw sp"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ∕organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in Database (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 o,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
              9
                44410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36;
                                                                                                                                 (japonica
              r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
              850 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Embryophyta; Tracheophyta; ; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 157371;
                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chromosome 6,
                                                                                                                             cultivar-group) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                            available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          email
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 29
AC119676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                               Overlapping Sequences:
5': RP11-486B10 AL445933, 2000-bp
3': RP11-216M14 AL451006, 2370-bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160573 bp DNA linear PRI 31-JUL
Homo sapiens chromosome 1 clone RP5-820016, complete sequence.
AC119676 AL157905
AC119676.2 GI:22024581
GenBank
of this
                                                                                                                                                Sequence Quality Assessment:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (30-APR-2002) Genome Center, University of Washington, Box 352145, Seattle, WA 98195, USA
3 (bases 1 to 160573)
Kaul,R.K., Olson,M.V., Zhou,Y., James,R.A., Rouse,G., Wu,Z., Kaul,R.K., Olson,M.V., Buckley,D., Kibukawa,M., Raymond,C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kaul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 160573)

Kaul,R.K., Olson,M.V., Zhou,Y.,
Saenphimmachak,C., Phelps,K.A.,
and Haugen,E.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and Haugen, E.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                    This entry has been annotated with sequence quality estimates computed by the Phrap assembly program. All manually edited bases have been reduced to qual
             Base-by-base quality values are not generally visible GenBank flat file format but are available as part
                                                                     Quality levels above 40 are expected
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            domo sapiens (human)
                                                       l error in 10,000 bp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCTCATCGCTCTCGTCG 56037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCTCATCGCTCTCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 160573)
                                                                                                                                                                                                                                                  Sequencing vector: plasmid; 69% of reads sequencing vector: plasmid; L08752; 31% of reads Chemistry: Dye-terminator Big Dye, Assembly program: Phrap; version 0.990319 Consensus quality: 160468 bases at least Q40 Consensus quality: 160565 bases at least Q30 Consensus quality: 160573 bases at least Q20 Insert size: 160573; sum-of-contigs Quality coverage: 8.7x in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                     Center project name: chr-1
Center clone name: RP5-820016 (sc0838)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: uwgchtgs@u.washington.
Drafting Center: SC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center: University of Washington Genome Center Center Code: UWGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Web site: http://www.genome.washington.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               James,R.A.,
Buckley,D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                         to have less than
                                                                                                                                                                                overlap
overlap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 159581;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rouse, G., Wu, Z.,
Kibukawa, M., Raymond, C.
                                                                                        quality
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRI 31-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                        zero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

entry's ASN.1 file.

This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality = 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest.

Sequence Validation:

This sequence has been validated by Multiple Complete Digest fingerprinting. Comparison of the experimentally derived digest fragments with sequence-predicted fragments is given below. The electronically-digested sequence consists of both insert and vector, in order to accurately represent the entire circular BAC. Small fragments below a variable cutoff (approximately 400-800 bp) are not resolved in the fingerprint and hence do not appear in the table. There are no significant remaining discrepancies between the experimental and predicted values. Uniquely ordered fragments are separated by dashed lines.

830	36	3571	1499	1881	3185	4826	3655		345	960	580	2834	1363	4205	1040	3480	3373	4695	1247	2814	512	449	4651 47	SeqDerMap FngrPrnt	- :
	1))	1		12	! ! !	1 1	3625 2022	2155 1007		;	:)) !			:	3434 1176			1 1 1 1	1 44	1	:	4729 3216	rnt SeqDerMap	
<800	6606	3950	<800	<800	<800	11922	2019	996	4743	<800	2019	8263	1415	760	<800	1161	3280	2235	<800	<800	7987	2124	3280	FngrPrnt	1
2227		, ,	1 1				: :			1452				: :	 	3575							8871	SeqDerMap F	- :
2226	<800	1963	5015	<800	3122	6701	7991	<800	2947	1438	2069	1500	5015	4505	4059	3629	2947	4233	3629	5218	7290	5578	8725	FngrPrnt	

ş

3 GCAGTTCTCTCACGCTCT 20

0

Query Match Best Local S Matches 18	FEATURES source																															
h Similarity 18; Conserva		1		269	1453	1936	49	214	178	163		123	601	11	476	674		280	2	: :	14217	4.			170	36	481	249	ω	,		12
34.6%; 100.0%; tive	Location/Qualifiers 1160573 /organism="Homo sapien	<800	2155	2828	14543	19745	<800	2155	1846	1653	4315	1223	<800	11253	<800	6779	1846	2828	2828	7061	13799	<800	7498	<800	1653	<800	4729	2506	3434	1223	781	1223
Score 18; DB Pred. No. 36; 0; Mismatches	ifiers mo sapiens"			151	353	30	720	-		:	327	210	664	627	6018		100	95	29	627	125	178	93			129	237			603	720	662
9; Len 0;				1472	3528	3076	7242	1737	<800	828	3280	2124	6606	6300	5928	7642	996	9445	<800	6300	1256	1737	996	760	3280	1256	2367	9188	2941	5928	7242	6606
lgth 160573; Indels 0;																	1	471		102	953	248	205	45	4.	122	114	82	55	1543	1142	16
Gaps																		4699	5015	1028	9559	2497	2069	<800	4233	1219	11239	8296	5578	15722	11239	1722

and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length = 200 bases. *NOTE: This is a "vorking draft' sequence. It currently consists of 70 contigs. The true order of the pieces is not known and their order in this sequence record is runs of N, but the exact sizes of the gaps are unknown. *This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved. 50 69: contig of 569 bp in length 60 928: contig of 579 bp in length 1009 1403: contig of 395 bp in length 11404 1483: gap of unknown length 2184 2103: contig of 395 bp in length 2184 2103: contig of 598 bp in length 22861: gap of unknown length 2862 3522: contig of 598 bp in length 2861: gap of unknown length 2862 3522: contig of 598 bp in length 4273 4898: contig of 599 bp in length 4273: gap of unknown length 5329: contig of 589 bp in length 5330 409: gap of unknown length	COMMENT On Feb 24, 2000 this sequence version replaced gi:6996991. For further information about this sequence, including its location and relationship to other sequence.	Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Pfeiffer, B., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and TITLE Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and Rubin, G.M. Submitted (27-0CT-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64121 Berkeley, Ch. 04720	Butenhott, C., Champe, M., Chevez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. TITLE Sequencing of Drosophila melanogaster JOURNAL Unpublished Olished T. Bayrer F. Black B. REFERENCE 2 (bases 1 to 161518)	SOURCE Drosophila melanogaster (fruit fly) ORGANISM Drosophila melanogaster Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Phydroidea; Drosophilidae; Drosophila. REFERENCE 1 (bases 1 to 16.1518) AUTHORS Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,	S1518 by chromo: -100F5	Db 143869 GCAGTTCTCTCACGCTCT 143886
of unknown length ig of 6068 bp in of unknown length ig of 6701 bp in of unknown length ig of 8170 bp in of unknown length ig of 1867 bp in in unknown length ig of 1867 bp in of unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 636 bp in 11 in the unknown length ig of 636 bp in 11 in the unknown length ig of 636 bp in 11 in the unknown length ig of 764 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 1868 bp in 11 in the unknown length ig of 488 bp in 11 in 196 the unknown length in 196 the	67279: contig of 7839 bp i 67359: gap of unknown leng 71454: contig of 4095 bp i	39017: gap of unknown length 42730: contig of 3713 bp in 42810: gap of unknown length 47071: contig of 4261 bp in 47151: gap of unknown length 511484: contig of 4333 bp in 51564: gap of unknown length 55312: contig of 3748 bp in 55392: gap of unknown length 59360: contig of 3968 bp in 59440: gap of unknown length	24288: gap of unknown length 26404: contrig of 2116 bp in 26484: gap of unknown length 29108: contrig of 2624 bp in 29188: gap of unknown length 32550: contrig of 3362 bp in 32630: gap of unknown length 35719: gap of unknown length 35719: contrig of 3218 bp in	16262: contig of 1457 bp i 16342: gap of unknown leng 18474: contig of 2132 bp i 18554: gap of unknown leng 20724: contig of 2170 bp i 20804: gap of unknown leng 20804: gap of unknown leng	6948: Contig of 915 b 7028: gap of unknown 8873: contig of 1845 8953: gap of unknown 10161: contig of 1208 10241: gap of unknown 12996: contig of 2755 11076: gap of unknown 14805: gap of unknown 14805: gap of unknown	410 5953: contig 954 6033: gap of

```
AC013579/c
LOCUS
                                                                                                                    뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                           RESULT 31
       DEFINITION
                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                        21 CATCGCTCTCGTCGCTGC 38
 AC013579 173093 bp DN Homo sapiens clone RP11-3C4, WORKING
                         AC013579
                                                                                                                  CATCGCTCTCGTCGCTGC 86419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            148438
148518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158952
159032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157561
157641
158265
158345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155640
155720
156287
156367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              152741
152984
153064
153313
153313
154242
154242
154322
154713
154713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    152113
152661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156695
157048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150651
151252
151332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146312
146392
146961
147041
147665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        152033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         149607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149041
                                                                                                                                                                                      ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   150571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              148961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    147745
                                                                                                                                                                                                                                                           /map="100F1-100F5"
/clone="BACR28N05 (D1183) RPCI-98 28.N.5"
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
/clone_lib="RPCI-98 (Roswell Park Cancer Institute
// Drosophila melanogaster BAC library, partial EcoRI
                                                                                                                                                                                                                                                                                                                                            /organism="Drosophila melanogaster"
/mol type="genomic DNA"
/strāin="y; cn bw sp"
/db xref="taxon:7227"
/chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ocation/
                                                                                                                                                                                                                                                                                                                                                                                                                                           . .161518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152660:
152740:
152983:
153063:
153063:
153312:
153312:
154221:
154221:
154712:
154712:
154712:
154712:
154712:
154712:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148960:
149040:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149606:
                                                                                                                                                                                                                             34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5: gap of unknown length
5: contig of 884 bp in length
6: contig of 601 bp in length
1: contig of 601 bp in length
2: contig of 701 bp in length
3: contig of 701 bp in length
3: contig of 704 bp in length
3: contig of 248 bp in length
3: contig of 243 bp in length
4: contig of 249 bp in length
5: gap of unknown length
6: gap of unknown length
7: gap of unknown length
7: gap of unknown length
8: contig of 391 bp in length
8: gap of unknown length
8: contig of 6847 bp in length
9: contig of 667 bp in length
9: contig of 553 bp in length
9: contig of 553 bp in length
9: contig of 553 bp in length
1: gap of unknown length
1: gap of unknown length
1: contig of 533 bp in length
1: contig of 624 bp in length
1: gap of unknown length
1: contig of 627 bp in length
1: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of unknown length conting of 569 bp in ler gap of unknown length conting of 624 bp in ler gap of unknown length conting of 693 bp in ler
                                                                                                                                                                                        Score 18; DB 2; ; Pred. No. 36; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of unknown length contig of 443 bp in length gap of unknown length contig of 566 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of unknown length
tig of 693 bp in length
'' unknown length
'' length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 624 bp in le
 DRAFT SEQUENCE,
                                                                                                                                                                                        0,
                                                                                                                                                                                                                           Length 161518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
HTG 12-MAR-2000
2, 26 unordered
                                                                                                                                                                                                                                                                 ij
                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                       1348
1448
2770
2870
4169
```

```
E 2 (bases 1 to 173093)

Birren,B., Linton,L., Nusbaum,C., Lander,E., Allen,N., Anderson,M.,

Baldwin,J., Barna,N., Beckerly,R., Boguslavkiy,L., Boukhgalter,B.,

Brown,A., Castle,A., Colangelo,M., Collins,S., Collymore,A.,

Cooke,P., DeArellano,K., Dewar,K., Domino,M., Donelan,L., Doyle,M.,

Ferreira,P., FitzHugh,W., Forrest,C., Funke,R., Gage,D.,

Galagan,J., Gardyna,S., Grant,G., Hagos,B., Heaford,A., Horton,L.,

Galagan,J., Gardyna,S., Grant,G., Hagos,B., Heaford,A., Klein,J.,

Howland,J.C., Johnson,R., Jones,C., Kann,L., Karatas,A., Klein,J.,

Liehoczky,J., Lieu,C., Locke,K., Macdonald,P., Marquis,N.,

McEwan,P., McGurk,A., McKernan,K., McLaughlin,J., Meldrim,J.,

Morrow,J., Naylor,J., Norman,C.H., O'Connor,T., O'Donnell,P.,

Peterson,K., Pollara,V., Riley,R., Roy,A., Santos,R., Severy,P.,

Stange-Thomann,N., Stojanovic,N., Subramanian,A., Talamas,J.,

Tesfaye,S., Tirrell,A., Vassiliev,H., Vo,A., Wheeler,J., Wu,X.,

Wyman,D., Ye,W.J., Zimmer,A. and Zody,M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (13-NOV-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Mar 12, 2000 this sequence version replaced gi:6984402.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 173093)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pieces.
ACO13579.4 GI:7229999
ACO13579.4 GI:7229999
HTG; HTGS_PHASE1; HTGS_DRAFT.
HOMO Sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens, clone RP11-3C4
                                                                                                                                                                                                                                                                                                                                                        NOTE: This is a 'working draft' sequence. It currently consists of 26 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                          as soon as it is available and the accession number be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------ Genome Center
Center: Whitehead Institute/ MIT Center for Genome Research
Center code: WIBR
1347: contig
1447: gap of
2769: contig
2869: gap of
4168: gap of
6550: contig
6650: gap of
8819: contig
8919: gap of
  g of 1347 bp
f 100 bp
g of 2282 bp
f 100 bp
g of 2169 bp
f 100 bp
f 100 bp
                                                         in length
                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                in length
                                                                                                              in length
                                                                                                                                                                                                                         in length
```

```
FEATURES
                                                                                                        misc_feature
                                      misc_feature
                                                                                                                                                                                                                                        misc_teature
                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76517
83773
83873
933873
93457
93457
105378
1105478
1118469
1118469
115439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28491
33814
33960
37960
38060
42631
42731
42731
50919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
51919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24652
28391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20923
21023
24552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10823
10923
13177
13177
13277
15575
15675
17612
                                                                                                                                                                                                                                                                                                          /note="a:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
8920. .10822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
2870. .4168
                                                                                                        /note="assembly_fragment"
24652. .28390
                                                                                                                                                                         /note="assembly_fragment" 21023. .24551
/note="assembly_fragment"
                                             /note="assembly_fragment"
28491. .33813
                                                                                                                                                                                                                                        /note="assembly_fragment"
17712. .20922
                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment"
13277. .15574
                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
10923. .13176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA"
/db_xref="taxon:9606"
/clone="RP11-3C4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1269. .6550
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2870..4168
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          clone_lib="RPCI-11 Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93356: contig of 9484 bp in 93456: gap of 100 bp 105377: contig of 11921 bp in 105477: gap of 100 bp 118468: contig of 12891 bp in 118468: contig of 12891 bp in 135438: contig of 16970 bp in 135438: contig of 16970 bp in 135438: gap of 100 bp 154449: gap of 100 bp 154449: gap of 100 bp in 154949: gap of 100 bp 154949: gap of 100 bp 154949: gap of 18144 bp in 174968: contig of 18144 bp in 17496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38059:
42630:
42730:
50918:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33913
                                                                                                                                                                                                                                                                                                                                  ssembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cont i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cont ig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ig of 4571 bp in length
of 100 bp
g of 8188 bp in length
of 100 bp
g of 8255 bp in length
of 100 bp
f 100 bp
f 100 bp
f 100 bp
in length
of 9318 bp in length
of 100 bp
f 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g of 5323 bp :
f 100 bp
g of 4046 bp :
f 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g of 2298 bp
g of 1937 bp
g of 1937 bp
f 100 bp
g of 3211 bp
g of 3529 bp
g of 3739 bp
g of 3739 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    f 100 bp
g of 2254 bp
f 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 32
AE003845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
Drosophila melanogaster (fruit fly)

ISM Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.

CE 1 (bases 1 to 173874)

RS Adams,M.D., Celniker,S.E., Holt,R.A., Evans,C.A., Gocayne,J.D.,

Amanatides,P.G., Scherer,S.E., Li,P.M., Hoskins,R.A., Galle,R.F.,

George,R.A., Lewis,S.E., Richards,S., Ashburner,M., Henderson,S.N.,

Sutton,G.G., Wortman,J.R., Yandell,M.D., Zhang,Q., Chen,L.X.,

Sutton,G.G., Wortman,J.R., Yandell,M.D., Zhang,Q., Chen,L.X.,

Sutton,G.G., Wortman,J.R., Yandell,M.D., Zhang,Q., Chen,L.X.,

Sutton,G.G., Baxter,E.G., Helt,G., Nelson,C.R., Gablor,G.L.,

Barandon,R.C., Rogers,Y.H., Blazej,R.G., Champe,M., Pfeiffer,B.D.,

Wan,K.H., Doyle,C., Baxter,E.G., Helt,G., Nelson,C.R., Gablowin,D.,

Ballew,R.M., Baster,E.G., Helt,G., Nelson,C.R., Gablewin,D.,

Beeson,K.Y., Benos,P.V., Berman,B.P., Bhandari,D., Belshakov,S.,

Borkova,D., Botchan,M.R., Bouck,J., Brokstein,P., Brottier,P.,

Chandra,I., Cherry,J.M., Cawley,S., Dahlke,C., Davenport,L.B.,

Davles,P., de Pablos,B., Delcher,A., Deng,Z., Mays,A.D., Dew,I.,

Dunkov,B.C., Dunn,P., Durbin,K.J., Evangelista,C.C., Ferriarz,C.,

Gelbart,W.M., Glasser,K., Glodek,A., Gong,F., Gorrell,J.H., Gu,Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    168719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 GCAGTTCTCTCACGCTCT 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AE003845 173874 bp DNA linear INV 14-FEB-2003 Drosophila melanogaster chromosome 4 section 1 of 5 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE003845.4 GI:28380223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE003845 AE014135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE003845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGTTCTCTCACGCTCT 168702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
154950. .173093
/note="assembly_fragment"
40721 c 40396 g 44224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               vector_side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59374. .68691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment" 135539. .154849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment" 118469. .135438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83873. . 93356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         vector_side:left"
76517. .83772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42731. .50918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
105478. .118368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33914. .37959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38060. .42630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="assembly_fragment"
)3457. .105377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="assembly_fragment'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34.6%; Score 18; DB
100.0%; Pred. No. 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .76416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 59273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2519 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 173093;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
MEDLINE
                                                                                                                                                                                    CONSRTM
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                 CONSRTM
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Guan, P., Harris, M., Harris, N.L., Harvey, D., Heiman, T.J.,
Hernandez, J.R., Houck, J., Hostin, D., Houston, K.A., Howland, T.J.,
Wei, M.H., Ibegwam, C., Jalali, M., Kalush, F., Karpen, G.H., Ke, Z.,
Kennison, J.A., Ketchum, K.A., Kimmel, B.E., Kodira, C.D., Kraft, C.,
Kravitz, S., Kulp, D., Lai, Z., Lasko, P., Lei, Y., Levitsky, A.A.,
Li, J., Li, Z., Liang, Y., Lin, X., Liu, X., Mattei, B., McIntosh, T.C.,
McLeod, M.P., McPherson, D., Merkulov, G., Milshina, N.V., Mobarry, C.,
Morris, J., Moshrefi, A., Mount, S.M., Moy, M., Murphy, B., Murphy, L.,
Muzny, D.M., Nelson, D.L., Nelson, R., Murphy, B., Murphy, L.,
Nusskern, D.R., Pacleb, J.M., Palazzolo, M., Pittman, G.S., Pan, S.,
Pollard, J., Puri, V., Reese, M.G., Reinert, K., Remington, K.,
Sannders, R.D., Scheeler, F., Shen, H., Shue, B.C., Siden-Kiamos, I.,
Simpson, M., Skupski, M.P., Swith, T., Spier, B.C., Siden-Kiamos, I.,
Stapleton, M., Strong, R., Sun, E., Sviskas, R., Tector, C., Turner, R.,
Worley, K.C., Wu, D., Yang, S., Yao, Q.A., Ye, J., Wassarman, D.A.,
Weinstock, G.M., Weissenbach, J., Williams, S.M., Woodaget,
Worley, K.C., Wu, D., Yang, S., Yao, Q.A., Ye, J., Yeh, R.F.,
Zhong, F.N., Zhong, W., Zhou, X., Zhu, X., Smith, H.O.,
Gibbs, R.A., Myers, E.W., Rubin, G.M., and Venter, J.C.
The genome sequence of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Celniker, S.E., Adams, M.D., Kronmiller, B., Wan, K.H., Holt, R.A., Celniker, S.E., Adams, M.D., Amanatides, P.G., Brandon, R.C., Rogers, Y., Barans, C.A., Goccayne, J.D., Amanatides, P.G., Brandon, R.C., Rogers, Y., Barans, C.A., Goccayne, J.D., Banzon, J., Beeson, K.Y., Busam, D.A., Carlson, J.W., Center, A., Champe, M., Davenport, L.B., Dietz, S.M., Dodson, K., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Ferriera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A., Chordera, S., Frise, E., Galle, R.F., Garg, N.S., George, R.A., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Ibegwam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A., Mulloth, T.C., Moy, M., Murphy, B., Nelson, C., Nelson, K.A., Nunoo, J., Pacleb, J., Paragas, V., Park, S., Patel, S., Pfeiffer, B., Scheeler, F., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Tyler, D., Williams, S.M., Zaveri, J.S., Smith, H.O., Venter, J.C. and Rubin, G.M., Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Misra, S., Crosby, M.A., Matthews, B.B., Bayraktaroglu, L., Campbell, K., Hradecky, P., Huang, Y., Kaminker, J.S., Prochnik, S.E., Smith, C.D., Tupy, J.L., Bergman, C.M., Berman, B.P., Carlson, J.W., Celniker, S.E., Clamp, M.E., Drysdale, R.A., Emmert, D., Frise, E., d Grey, A.D. N.J., Harris, N.L., Kronmiller, B., Marshall, B., Milburn, G.H., Richter, J., Russo, S., Searle, S.M.J., Smith, E., Shu, S., Smutniak, F., Whitfield, B.J., Ashburner, M., Gelbart, W.M., Rubin, G.M., Mungall, C.J. and Lewis, S.E. Annotation of Drosophila melanogaster genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 (bases 1 to 173874)
4 (bases 1 to 173874)
Adams, M.D., Celniker, S.E., Gibbs, R.A., Rubin, G.M. and Venter, C.J.
Direct Submission
Submitted (21-MAR-2000) Celera Genomics, 45 West Gude Drive,
Rockville, MD 20850, USA
                                                                                                                         Submitted (23-JAN-2003) University of California Berkeley, Sciences Addition, Berkeley, CA 94720, USA On Feb 14, 2003 this sequence version replaced gi:22759414
                                                                                                                                                                                                       FlyBase
Direct Submission
                                                                                                                                                                                                                                                                                                    Submitted (06-SEP-2002) University of California Berkeley, Sciences Addition, Berkeley, CA 94720, USA 6 (bases 1 to 173874)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10731132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 173874)
                                                                                                                                                                                                                                                                                                                                                                                           Submission
                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 to 173874)
   organism="Drosophila melanogaster"
| mol_type="genomic DNA"
                                                                                                                      replaced gi:22759414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Prochnik, S.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Frise, E., de
                                                                                                                                                                                 539 Life
   mRNA
                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Complement (17702. .18272)
/locus tag="TE20401"
complement (17702. .18272)
/map="107A1-102A1"
/transposon="Rtlb{}1477"
                                                                                                                                                                 /product="CG32013-PA"
/product="CG32013-PA"
/protein id="AAN06536.1"
/db_xref="G1:22759415"
/db_xref="FLYBASE:FBGN0052013"
/db_xref="FLYBASE:FBGN0052013"
/translation="MGAAADAAVPGTTSAAAALVVAAPHLVRASSTPSSPGLLLPGSP
PSGSSFLASYHLPVRV1ADRVTPGPPSSSRSPASSHTRVSGASSASIDAGHVHVTDCC
CHRRPPISTVRTTWPTCACGISHASCLSYRGHSLSWGGVSVRGCGGDVVRVGRGGVS
SGACAGVIRGGVGGGCVDGCRGGVSVGNGGCGGGGAEPTTPAIRALAIRAVSSSSDD
TGGTVSPPSSSSLSEERVIASAAPSVFAIGWSSVFFCPYR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (13288. 13761)
/map="102A1"-102A1"
/transposon="1366|}1476"
/db_xref="FLYBASE:FBt:0020400"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /locus tag="CG32013"
/product="CG32013-RA"
/db_xref="FLYBASE:FBgn0052013"
complement(join(22335...22528,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (11691. .12255)
/map="102A1-102A1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (2554.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (638. .1719)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (join (22335. .22528, 22617.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="FLYBASE:FBt10020401" complement (22335. .23205)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="TE20400"
complement (1326)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12291. .13244
/map="102A1-102A1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (11691.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4886. .11664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (2554.
                                                 /locus_tag="CG17923"
/note="last_curated_on_Thu_Apr
/map="102A1-102A1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="CG32013"
/note="last curated on Thu
/map="102A1-102A1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /map="102A1-102A1"
/transposon="GATE{}1473"
/db_xref="FLYBASE:FBL10020397"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /locus_tag="CG32013"
/note="CG32013 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="FLYBASE:FBgn0052013"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transposon="GATE{}1475"
/db_xref="FLYBASE:FBt10020399"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="TE20399"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /transposon="GATE{}1474"
/db_xref="FLYBASE:FBti0020398"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="TE20398"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /locus_tag="TE20397"
4886. .11664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transposon="Rt1c{}1472"
/db_xref="FLYBASE:FBt10020396"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /map="102A1-102A1"
/transpoor="7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /locus_tag="TE20396"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transposon="baggins{}1471"
/db_xref="FLYBASE:FBt10020395"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="TE20395"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="genotype: y[1];
complement(638. .1719)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:7227"
/chromosome="4"
_xref="FLYBASE:FBgn0040037"
1(24068. .24477,24979. .251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cn[1] bw[1] sp[1]; Rh6[1]"
.25153,25218. .25450,25501. .25621)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Apr
                                                                                    25 15:33:46 PDT 2002"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25 15:01:21 PDT 2002"
```

```
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 33
AC007587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

CE 1 (bases 1 to 185916)

CE 1 (bases 1 to 185916)

RRS (Celniker, S.E., Adams, M.D., Kronmiller, B., Tyler, D., Wan, K.H., Holt, R.A., Evans, C.A., Gocyne, J.D., Amanatides, P.G., Brandon, R.C., Rogers, Y., An, H., Baldwin, D., Banzon, J., Beeson, K.Y., Busam, D.A., Carlson, J.W., Center, A., Champe, M., Dylec, C., Dresnek, D., Farfan, D., Carlson, M., Dorsett, V., Doup, L.E., Doyle, C., Dresnek, D., Farfan, D., Ferriera, S., Frise, E., Galle, R. F., Garg, N. S., George, R.A., Gonzalez, M., Houck, J., Hoskins, R.A., Hostin, D., Howland, T.J., Ibegwam, C., Jalali, M., Kruse, D., Li, P., Mattei, B., Moshrefi, A., Mocintosh, T.C., Moy, M., Murphy, B., Nelson, C., Nelson, K.A., Nunoo, J., Pacleb, J., Paragas, V., Park, S., Patel, S., Pfeiffer, B., Phouanenavong, S., Pittman, G.S., Patel, S., Pfeiffer, B., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S. M., Stapleton, M., Strong, R., Svirskas, R., Tector, C., Williams, S. M., Unpublished (1998)

CE 2 (bases 1 to 185916)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12415
2 (bases 1 to 185916)
2 (bases 1 to 185916)
2 (clniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Londtan, M. A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster, chromosome BACR02D22, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC007587
AC007587.11 GI:17737031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="FLYBASE:FBgn0052011"
complement(}0in(26482. .26667,27167. .27349,28371.
28966. .29301,29356. .30391,30551. .31625,31703. .
33949. .34110)}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="CG17923"
/product="CG17923-RA
/product="CG17923-RA
/db_xref="FLYBASE:FBgn0040037"
join[24134...24477,24979...25153,25218...25450,25501...25621)
/locus_tag="CG17923"
/notes="CG17923 gene product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (26482. .34110)
/locus_tag="CG32011"
/note="last curated on Thu Aug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RRNPGGWVEQETYY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="CG17923-PA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34.6%; Score 18; DB 100.0%; Pred. No. 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185916 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA linear INV
e 2R, region 41C-41D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 173874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29 10:39:29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INV 14-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDT 2002'
                                                                                                                                                                                              Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BAC clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .28609,
```

```
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC008333/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29892 CATCGCTCTCGTCGCTGC 29909
Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Pfeiffer, B., Poon, L., Weinburg, T., Zhang, R., Zieran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, F. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., Gorge, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, N., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirekas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Sequencing of Drosophila melanogaster Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC008333
Drosophila melanogaster chromosome 2 cl
02.C.2 map 40A-40A strain y; cn bw sp,
***, 117 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTG; HTGS PHASE1.

Drosophila melanogaster (fruit fly)

Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (19-MAY-1999) Drosophila Genome Center, Lawrence Berkeley
Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Dec 14, 2001 this sequence version replaced gi:7264774.
Sequence submitted by:
Berkeley Drosophila Genome Project
Berkeley Drosophila Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 187223)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This sequence was assembled using end sequences from a whole genome shotgun and from subclones of this BAC and its neighboring clones. For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC008333.22 GI:19482330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lawrence Berkeley National Laboratory, MS 64-121
Berkeley, CA 94720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="BACR02D22 (D613)"
/clone=lib="RPCI-98 (Roswell Park Cancer Institute Drosophila melanogaster BAC library, partial EcoRI pBACe3.6)"
a 37375 c 36026 g 56499 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .185916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:7227"
/chromosome="2R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /strain="y; cn bw sp'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                map="41C-41D"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34...
100.0%; PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34.6%; Score 18; DB
100.0%; Pred. No. 36;
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA linear HTG 15-MAR-2002 clone BACR02C02 (D869) RPCI-5
sp, *** SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 185916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG 15-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blazej, R.G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         i
ה
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

gap of unknown le gap of unknown le contig of 1366 bp gap of unknown le contig of 1372 bp contig of 1372 bp gap of unknown le contig of 1311 bp gap of unknown le contig of 1313 bp gap of unknown le contig of 1345 bp gap of unknown le contig of 2428 bp gap of unknown le contig of 2428 bp gap of unknown le contig of 2428 bp gap of unknown le contig of 67316 bp gap of unknown le contig of 1300 bp gap of unknown le contig of 1604 bp gap of unknown le contig of 1604 bp gap of unknown le contig of 17351 bp gap of unknown le contig of 13251 bp gap of unknown le contig of 14368 bp gap of unknown le contig of 14368 bp gap of unknown le contig of 13251 bp gap of unknown le contig of 14368 bp gap of unknown le contig of 13251 bp gap of unknown le contig of 12151 bp	1999) Drosop 121, Berkele 223) yani, A. Ar pe, M. Chave ye, M. Chave ye, M. Chave ye, Galle ,R.A. House ,Lewis, S. ,Lewis, S. ,Lewis, S. ,Lewis, S. ,Yee, M. 2002) Drosop 121, Berkell is sequence ation about o other sequence ation about o other sequence is sequence ation about o other sequence is length 'working dra contigs The their order between the be updated available
1404333 gai 140433 gai 140719 gai 142044 gai 142044 gai 142044 gai 1430611 gai 1430611 gai 143778 gai 143778 gai 144780 gai 144780 gai 145783 gai 145783 gai 145783 gai 146388 gai 147129 gai 1476311 gai 1476311 gai 1476311 gai 1476311 gai 1476311 gai 1476311 gai 1476311 gai 1476311 gai 1476311 gai 15089 gai 15089 gai 151807 gai 1521687 gai	107334 107413: gap of unknown 16220 130488: contig of 14269 130568: gap of unknown 16220 130488: contig of 14269 130569 130569 130568: gap of unknown 150569 131544: gap of unknown 1515 131544: gap of unknown 1515 131544: gap of unknown 1515 131543: gap of unknown 1515 131558: gap of unknown 151558: gap o

```
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 35
AC016393/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     129760 CATCGCTCTCGTCGCTGC 129743
                                                                                                                                                                                                                                                                                            Birren, B., Lincon, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M., Baldwin, J., Barra, N., Beckerly, R., Boguslavkiy, L., Boukhgalter, B., Brown, A., Castle, A., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Domino, M., Donelan, L., Doyle, M., Ferreira, P., FitzHugh, M., Forrest, C., Funke, R., Gage, D., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., Lehoczky, J., Lieu, C., Locke, K., Macdonald, P., Marquis, N., McGewan, P., McGurk, A., McKernan, K., McLaughlin, J., Meldrim, J., Morrow, J., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., Peterson, K., Pollara, V., Riley, R., Roy, A., Santos, R., Severy, P., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Tirrell, A., Vassiliev, H., Vo, A., Wheeler, J., Wu, X., Nyman, D., Ye, W. J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21 CATCGCTCTCGTCGCTGC
                   Research, 320 Charles Street, Cambridge, MA 02141, USA
3 (bases 1 to 188032)
Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, Parren, B., Linton, L., Barna, N., Bastien, V., Beda, F., Boguslavkiy, L., Boukhgalter, B., Brown, A., Burkett, G., Campopiano, A., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArtellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArtellano, K., Dewar, K., Diaz, J.S., Dewar, K., Diaz, J.S., Dewar, K., Dewar, K., Diaz, J.S., Dewar, K., Dewar, K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC016393 188032 bp DNA linear Homo sapiens chromosome 12 clone RP11-199C7 map 12, IN PROGRESS ***, 91 unordered pieces.
                                                                                                                                                                                                                                               Submitted (25-NOV-1999) Whitehead Institute/MIT Center
                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens chromosome 12, clone RP11-199C7 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Birren, B., Linton, L., Nusbaum, C. and Lander, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC016393.3 GI:7230191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 188032)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 188032)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156444
156524
157099
157179
157984
1580682
159762
160167
160247
160580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154197
154643
154723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTGS_PHASE1.
sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    155047
155127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             153423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eutheria; Primates; Catarrhini; Hominidae; Homo.
         Domino, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157178: gap of 157983: contig 157983: contig 158063: gap of 159761: gap of 160166: contig 160166: gap of 160246: gap of 160246: gap of 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159681:
159761:
160166:
160246:
160579:
160659:
160963:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    153342:
153422:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156523:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 155126:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157098:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154722:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54196:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2: contig of 712 bp in length
2: gap of unknown length
6: contig of 694 bp in length
6: gap of unknown length
2: contig of 446 bp in length
2: gap of unknown length
6: gap of unknown length
6: contig of 324 bp in length
6: gap of unknown length
6: gap of unknown length
3: contig of 1317 bp in length
3: contig of 575 bp in length
8: contig of 685 hp in length
8: gap of unknown length
8: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
gap of
contig
gap of
      Doyle, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of unknown length
g of 1618 bp in length
f unknown length
g of 405 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          f unknown lengt
g of 805 bp in
f unknown lengt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of 333 bp in length
unknown length
of 304 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
      Ferreira, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 187223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
FitzHugh, W.,
                                                                                                                                               Abraham, H., Allen, N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG 24-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                               for Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

밁 á

COMMENT

```
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Iliev, I., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lieu, C., Liu, G., Locke, K., Maddonald, P., Marquis, N., McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Miranda, C., Mlenga, V., Morrow, J., Murphy, T., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T.M., Oliver, J., Reverson, K., Pierre, N., Pisani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Stange-Thomann, N., Schauer, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfaye, S., Theddore, J., Tirrell, A., Travers, M., Trigilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wi, X., Wyman, D., Ye, W.J., Voung, G., Zainoun, J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (24-AUG-2002) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Mar 12, 2000 this sequence version replaced gi:6759157. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOTE: This is a 'working draft' sequence. It currently consists of 91 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   10252
10352
11685
11785
                         16486
16586
17951
17951
18051
18063
18163
19592
19692
                                                                                                                                                                                                                                                                                                                                                                                       12955
13055
                                                                                                                                                                                                                                                                                                                              14267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2366
2466
3983
4083
5090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9072
10251
10351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11684
11784
                                                                                                                                                                                                                                                                                                     15481
                                                                                                                                                                                                                                                                                                                                                              14260
                                                        19691 :
                                                                                                                                                                                                                                                                     16485:
                                                                           gap of
                                                     gap
                                                                                                                                       gap of contig
                                                                                                                                                                                                      gap o
                                                                                                                                                                                                                                                               gap o
conti
                                                                                                                                                                                                                                                                                                                           gap o
                                                                                                                                                                                                                                                                                                                                                                                       gap c
                                                                                                                                                                                                                                                                                                                                                                                                                                                gap o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cont i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
                                                                                                                                                                                                                                                                                                                                                                                                                                      tig of 1179 bp in left of 100 bp in left of 1333 bp in left 100 bp in left of 100 bp in left of 1170 bp in l
                                                                                                                                                                                                                                                                                                                                                    of 100 bp
ig of 1112
of 100 bp
of 100 bp
g of 1429 bp in length
of 100 bp
ig of 1178 bp in length
                                                                                                                                                                                                of 100 bp
lg of 1365 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g of 1002 bp in length f 100 bp g of 1517 bp in length f 100 bp in length g of 1007 bp in length f 100 bp g of 1042 bp in length
                                                                                                                                       00 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100 bp
of 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 bp
of 1249
                                                                                                                                                                                                                                                         of 1115 bp in length
100 bp
of 1004 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 1263 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 bp
                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                    bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            þ
                                                                                                                                       in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij.
                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Morrow, J.,
```

```
contig
100 bp
                                                                                                                         of 1244 bp
                                                                                                                            of 1182 bp
                                                                                                                          100 bp
đđ
ä
       'n
             'n
                 in
                     'n
                        in
                           'n
                               'n
                                  in
                                      in
                                         ä
                                             ä
                                                'n
                                                   ä
                                                       ä
                                                          ä
                                                              ij
                                                                 'n
                                                                     ij
                                                                        ä
                                                                            ij
                                                                               'n
                                                                                   ä
                                                                                      ä
                                                                                          in
                                                                                             'n
                                                                                                ij
                                                                                                    in
                                                                                                       ä
                                                                                                           ä
                                                                                                              ij
                                                                                                                  in
                                                                                                                         'n
                                                                                                                            in length
                                     length
                                            length
                                                                                             length
          length
                                                                        length
                                                                                  length
                                                                                                length
                                                                                                       length
                                                                                                          length
                                                                                                                  length
                                                                                                                     length
length
                    length
                                                length
                                                       length
                                                             length
                                                                 length
                                                                     length
                                                                               length
                                                                                         length
                                                                                                    length
   length
             length
                 length
                        length
                           length
                               length
                                         length
                                                          length
                                                                            length
                                                                                      length
                                                                                                              length
       length
                                  length
                                                   length
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 36
AC013254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        116725
CE 2 (bases 1 to 189893)

CE 2 (bases 1 to 189893)

RS Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoyle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Woshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.

Direct Submission

AL Submitted (05-NOV-1999) Drosophila Genome Center, Lawrence Berkeley Birect Submission replaced gi: 6984327. Por further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence) or send email to bdgp@fruitfly berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a "working draft' sequence It currently consists of 184 contigs. The true order of the pieces arbitrary. Gaps between the contigs are represented as arbitrary. Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilade; Drosophila.

E 1 (bases 1 to 18983)

S Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciestolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Path, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.

Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG; HTGS_PHASE1.
Drosophila melanogaster (fruit fly)
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC013254
Drosophila melanogaster chromosome 2 clone RPCI-98 25.0.10 map 40D-40D strain y; cn bw PROGRESS ***, 184 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC013254.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTTCTCTCACGCTCTCA 116708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTTCTCTCACGCTCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79637
81081
81181
83166
83266
83266
85292
85392
85392
88138
88238
90319
90419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78035
78135
79537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81180: contig of 181265: gap of 1683265: gap of 1083265: gap of 0083291: contig of 008329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:7259653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85291:
85391:
88137:
88137:
88237:
90318:
90418:
92176:
92276:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig gap of contig gap of gap of gap of gap of gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of 1444 bp
f 100 bp
g of 1985 bp
f 100 bp
g of 2026 bp
f 100 bp
g of 2746 bp
f 100 bp
g of 2781 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 1402
100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 bp
of 1758 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 188032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bw sp, ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear HTG 17-MAR-2000
BACR25010 (D1173)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCING IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

20734: Contig of 61 20814: gap of unkno 208151: contig of 32 211231: gap of unkno 21885: contig of 65 21965: gap of unkno 23030: contig of 10 23110: gap of unkno 24601: contig of 14 24601: contig of 14 24601: contig of wheno 25250: contig of wheno 25250: contig of so 25250: contig of so 25250: contig of so 25250: contig of so	6 16145: gap of unkno 6 16953: contig of 80 4 17033: gap of unkno 17569: contig of 53 0 17649: gap of unkno 0 18097: contig of 44 8 18177: gap of unkno 8 18940: contig of 76 1 19020: gap of unkno 1 19247: contig of 22 1 19227: gap of unkno 1 19247: contig of 74 20123: gap of unkno 6 20043: contig of 74 20123: gap of unkno	9684: gap of unknown 10668: contig of 603 k 10748: gap of unknown 10748: gap of unknown 11441: contig of 693 k 11521: gap of unknown 1213: contig of 612 k 12213: gap of unknown 13144: gap of unknown 13144: gap of unknown 13144: gap of unknown 13064: contig of 791 k 13149: gap of unknown 14921: contig of 906 k 15001: gap of unknown 14921: contig of 1064	4312; contig of system 4312; contig of system 4312; contig of system 4912; contig of system 4992; gap of unknown 5610; contig of 286 k 6056; gap of unknown 6580; contig of system 6580; gap of unknown 6580; gap of unknown 6580; gap of unknown 7196; contig of system 7276; gap of unknown 7276; gap of unknown 7861; contig of system 7941; gap of unknown 9081;	ord will be updated with the finitial as it is available and the access rved. 588: contig of 588 bp in le 668: gap of unknown length 1103: contig of 395 bp in le 1143: gap of unknown length 1659: contig of 516 bp in le 1739: gap of unknown length 12258: contig of 519 bp in le 2338: gap of unknown length 2633: contig of 525 bp in le 2713: gap of unknown length 12713: gap of unknown 12713: g
103818: contig of 4 101818: gap of unkn 101818: gap of unkn 101818: gap of unkn 101818: contig of 7 101818: contig of 8 101818: contig of 8 105717: gap of unkn 106017: contig of 3 106097: gap of unkn 106097: gap of unkn 106098: contig of 2 106428: gap of unkn 106428: gap of unkn 107126: gap of unkn 107126: gap of unkn 107126: gap of unkn 107126: contig of 6 107046: contig of 6	99336 99914: Contig of 579 bp in 199315 99949; gap of unknown length 199915 100377: Contig of 383 bp in 100378 100457: gap of unknown length 100458 101024: Contig of 487 bp in 101024 gap of unknown length 101025 101605: Contig of 581 bp in 101605 contig of 581 bp in 101606 101685: gap of unknown length 102541 102540: Contig of 684 bp in 102541 103304: Contig of 684 bp in 103305 103384: gap of unknown length 103305 103305 103384: gap of unknown length 103305 103384: gap of unknown length 103305 103305 103305 103384: gap of unknown length 103305	34 53639 contig 53719: gap of 5306: contig 20 55306: gap of 55386: gap of 61367: gap of 68 61467: gap of 68 66422: contig 68 66422: gap of 72908: gap of 72908: gap of 79928: gap of 89 79928: gap of 89 80008: gap of 89 80008: gap of 29 80008: gap of	34 3633: gap of unknown length 34 38274: contig of 1641 bp in 35 38384: gap of unknown length 55 39889: contig of 1535 bp in 90 3999: gap of unknown length 70 41731: contig of 1762 bp in 70 41811: gap of unknown length 12 41829: contig of 2018 bp in 13 43829: contig of 27725 bp in 14 43829: gap of unknown length 16 46634: contig of 1851 bp in 17 4655: contig of 1918 bp in 18 46714: gap of unknown length 19 4655: contig of 1918 bp in 19 4655: contig of 1918 bp in 19 4653: contig of 1918 bp in 19 4653: contig of 1918 bp in 19 4653: contig of 1918 bp in	of 1133 b unknown l of 394 bp unknown l of 1134 b 1134 b 1136 b unknown l of 1316 b unknown l of 1316 b unknown l of 1340 b unknown l of 1350 b unknown l of 1355 b unknown l

밁 Ś

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Locus
                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC013254/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64905 CATCGCTCTCGTCGCTGC 64922
                                                                                                                     Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Mar 17, 2000 this sequence version replaced gi:6984327.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sfquence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently consists of 184 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence will be available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Lee, B., Lewis, S., Li, Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Patk, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gelniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, I Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R. A., Harris, N.L., Hinkle, A., Hoskine, R.A., Houston, K.A., Hummasti, S.R., Karra, I Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A. R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Man, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Sequencing of Drosophila melanogaster Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACO13254 189893 bp DNA linear HTG 17-MAR-2000 Drosophila melanogaster chromosome 2 clone BACR25010 (D1173) RPCI-98 25.0.10 map 400-40D strain y; cn bw sp, *** SEQUENCING IN PROGRESS ***, 184 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (05-NOV-1999) Drosophila Genome Center, Lawrence Berkeley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTG; HTGS PHASE1.
Drosophila melano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC013254
AC013254.6 GI:7259653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 189893)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 189893)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107625
107705
108663
108743
109479
109459
110173
110253
                                                                                                      preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107704: gap of unknown length
108662: contig of 958 bp in length
108742: gap of unknown length
109478: contig of 736 bp in length
109558: gap of unknown length
110172: contig of 614 bp in length
110252: gap of unknown length
110986: contig of 734 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34.6%;
       588: contig of 588 bp in length
668: gap of unknown length
1063: contig of 395 bp in length
1143: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2; Length 189893; 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s, N.L.,
Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
  4930
4993
4993
5611
56977
6586
6057
6661
7197
7277
7862
9082
9082
9082
9082
9082
9197
7277
7862
10749
110749
11142
11145
11142
11150
11142
11150
11142
11150
11143
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
11145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1144
1660
1740
2259
2339
2634
2714
2714
2713
3319
3319
3813
3813
3913
                                                                                                                                                                                                                                                                                                                                                                                                     20123:
20734:
20814:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7941:
9001:
9081:
9684:
9764:
10668:
10748:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18177:
18940:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16953:
17033:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16065:
16145:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13064:
13144:
13935:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14015:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6580:
6660:
7196:
7276:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig gap of contig gap of contig gap of gap of contig gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of contig gap of contig
conting contin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of contig gap of contig gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
                                                                                                                                                                                 f unknown length
g of 1065 bp in length
f unknown length
g of 1491 bp in length
f unknown length
g of 569 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         f unknown length
g of 227 bp in length
f unknown length
g of 716 bp in length
                                                                                       g of 1133 bp in 1
f unknown length
g of 394 bp in le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown le
  unknown
of 1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length of 1064 bp in length unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length
of 791 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of 1060 bp in length unknown length of 603 bp in length
                                          unknown length
of 1134 bp in length
                                                                                                                                                                                                                                                                                                                               of 654 bp in
                                                                                                                                                                                                                                                                                                                                                                               unknown lengt
of 337 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                              unknown lengt
of 611 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown lengt
of 763 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 448 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown lengt
of 536 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 808 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown length
of 906 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 851 bp in le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
of 612 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
of 693 bp in lo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length of 904 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown length
of 585 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown length
of 536 bp in lo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 524 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown lengt
of 286 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown lengt
of 618 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 514 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 525 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 519 bp
                                                                                                                                                                                                                                                                                                                                                           unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 516 bp in length
                                                                                                                                 length
bp in length
length
bp in length
                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                         length
                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
```

```
29548

29548

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20628

20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      102540:
102620:
103304:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100944:
                                                                                                                                                                                                                                                1071
                                                                                                                                                                                                                                                                                                                                                                                                                               105717:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88782:
99255:
99335:
99914:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41811:
43829:
43909:
46634:
46714:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5: gap of unknown length
3: contig of 1908 bp in length
3: gap of unknown length
9: contig of 3006 bp in length
6: gap of unknown length
7: contig of 6001 bp in length
8: gap of unknown length
7: contig of 6001 bp in length
8: contig of 64955 bp in length
8: contig of 6496 bp in length
8: contig of 6406 bp in length
8: contig of 6940 bp in length
8: gap of unknown length
8: gap of unknown length
8: gap of unknown length
9: contig of 6940 bp in length
9: gap of unknown length
1: gap of unknown length
1: gap of unknown length
1: contig of 10473 bp in length
1: contig of 579 bp in length
1: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of unknown contig of 2725 less of unknown contig of 1851 less of unknown contig of 1908 less of 1908 less
                               contig
gap of
gap of
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown contig of 844 by gap of unknown contig of 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig gap of contig gap of contig gap of contig gap of gap of gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of contig
g of 736 bp in length f unknown length g of 614 bp in length f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                f unknown
g of 1641
f unknown
g of 1535
g of 1762
f unknown
g of 1762
f unknown
f unknown
g of 2018
                                                                                                                                                 unknown le
                                                                                                                                                                                                             unknown le
of 498 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
g of 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      t unknown
g of 1340
                                                                                                                                                                                                                                                                of 251 bp in length
unknown length
of 618 bp in length
                                                                                                                                                                                                                                                                                                                                                            unknown length
of 300 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 844 bp in length
unknown length
of 1818 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown lo
                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a length
                                                                                                                                                                                                                                                                                                                                                                                                                                              length
op in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
bp in length
                                                                                                                     length
                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bp in length
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in
                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
```

```
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 38
AC007415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                          AL Submitted (28 APR-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Mar 17, 2000 this sequence version replaced gi:7159347.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.
* NOTE: This is a 'working draft' sequence. It currently consists of 103 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
* be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76500 CATCGCTCTCGTCGCTGC 76483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M. A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Pfeiffer, B., Poon, L., Weinburg, T., Zhang, R., Zieran, L.L. and Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, I Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, I Kearney, L., Lee, B., Lewis, S., Li, Ling, H., Moshrefi, A.R., Moshrefi, N., Nixon, K., Pacleb, J.M., Pang, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG; HTGS_PHASE1.

Drosophila melanogaster (fruit fly)

Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Eukaryota; Metazoa; Arthropoda; Brachycera; Muscomorpha;

Rephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          198282 bp DNA linear HTG 17-MAR-2000 Drosophila melanogaster chromosome 2 clone BACR05A24 (D603) RPCI-98 ***, 103 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rubin, G.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequencing of Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC007415.11 GI:7259656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC00741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 198282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 198282)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
927
1007
1302
1382
1382
1861
1941
2404
2484
2896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   110986: contig of 734 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34.6%;
                         1860:
1940:
2403:
2483:
2895:
                                                                                                                                                            1006:
1301:
1381:
           5: contig of 926 bp in length
5: gap of unknown length
1: contig of 295 bp in length
1: gap of unknown length
2: contig of 479 bp in length
3: gap of unknown length
3: contig of 43 bp in length
3: gap of unknown length
3: gap of unknown length
5: contig of 43 bp in length
6: contig of 412 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 18; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 189893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

2976 3479 3559 4035 4115 4789 5550 5630 7698

of.

```
g ot ...

Jig of 669 bp in lerry.

Jig of 669 bp in lerry.

Jof unknown length

Antig of 654 bp in length

Tounknown length

Tounknown length
                                                                                                                                                                                                                                                                                                                            d of John length
                                                                                                                                                                                                                                                                                                                                                                                                      of unknown length
lig of 3815 bp in length
of unknown length
lig of 5452 bp in length
lig of 6462 bp in length
lig of 4628 bp in length
lig of 9199 bp in length
of unknown length
of unknown length
of 13854 bp in length
lig of 13856 bp in length
lig of 13859 bp in length
lig of length
lig of 13856 bp in length
lig of 15907 bp in length
lig of 16866 bp in length
lig of 18466 bp in length
lig of 1866 bp in length
lig of 1866 bp in length
lig of 1866 bp in length
lig of light length
lig of light length
lig of light length
light light light length
light light light length
light light light length
light lig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown le
of 476 bp
                                                                                                                                                                                                                       of 608 b
                                                                                                                                                                                                                                                                                                                     unknown le
of 712 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
of 7832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown
of 5223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 3462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
of 2566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
of 2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 1761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
of 2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
of 2839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
of 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of 814 b
                                                                                                                                                                     unknown lengt
of 659 bp in
                                                                                                                                                                                                                                                                   unknown lengt
of 902 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown lengt
of 681 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2453
                                                                                                                                                                                                                         dq 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        814 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 674 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 bp 1.
wn length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 đđ
                                                                                                                                                                                                                                             length
in length
                                                                                                                                                                                                                                                                                                                                           length
in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               n length
bp in length
n length
s bp in length
length
n length
n length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n length
l bp in length
n length
s bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
in length
                                                                                                                                                                                                   . length
in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
bp in
length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                Ś
                                                                          Query Match
Best Local S
Matches 18
                             21 CATCGCTCTCGTCGCTGC
                                                                                                Similarity
                                                                                                                                                                        173281
173834
173914
174941
175021
175733
175813
176896
177583
177687
177583
177687
177583
177683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167964
168339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         163625
165093
165173
165867
165947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162156
162236
162543
162623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154281
154361
155657
155737
156329
156409
157267
157267
157347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   171850
172399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169561
170068
170148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         168720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           166184
166264
167264
167344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162965
163045
163545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           161497
161577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 160698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         159837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             159397
159757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158994
159074
159317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             169481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             160778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68419
                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68800
                                                                34.6%; but
100.0%; Pr
                                                                                                                                                                                                                                                                                         175732:
175812:
176895:
176975:
177582:
                                                                                                                                                                     177662:
178111:
178191:
178900:
178980:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68799:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59836:
                                                                                                                                                                                                                                        gap of contig ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig gap of contig gap of contig gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of contig
                                                                                                                                                                   gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of contig ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                             38
                                                                          Score 18; DB Pred. No. 36; O; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ig of 3u.
of unknown length
tig of 681 bp in length
of unknown length
of for bp in length
intig of 507 bp in length
whown length
had in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       j ot ...
if unknown leny...
ig of 1000 bp in leny...
whown length
                                                                                                                                                                of unknown length
g of 1083 bp in length
of unknown length
g of 607 bp in length
f unknown length
g of 449 bp in length
of unknown length
g of 709 bp in length
g of 709 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   f unknown leis.
g of 719 bp in len
g-known length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown length
g of 579 bp in length
f unknown length
g of 307 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    f unknown length
g of 1086 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   f unknown length
g of 757 bp in len
f unknown length
g of 785 bp in len
g of 785 bp in len
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g of 243 bp in le
f unknown length
g of 360 bp in le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown le
                                                                                                                                                                                                                                                                                                                                                                           of 1027 bp in length
unknown length
of 712 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown length
of 553 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown lengt
of 549 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 1468 bp in lengt
unknown length
of 694 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length
of 722 bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown lengt
of 301 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown lengt
of 375 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 500 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown lengt
of 342 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 481 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown length
of 858 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 592 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
of 1296 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
bp in length
                                                                                                                                                                                                                                                                                                                                   length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                            ength
op in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ength
p in length
                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in length
                                                                                                                      Length 198282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                            0
                                                                          Gaps
```

9244
12163
12163
114244
114344
114344
116185
116185
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295
116295

48761:

ဓ္ o ff

debantiotic debant

16104: 16184: 18228: 18308:

128155: 146641: 146721: 147805: 147885:

148270: 148190: 94772: 94852: 112088: 112168: 128075:

149254 149334 150046 150126 150128 151108 151716 151716 151796 151796 151796 151796 151796 151796 151796 151796 151796 151796

0

	TITLE JOURNAL COMMENT	TITLE JOURNAL REFERENCE AUTHORS	REFERENCE AUTHORS	RESULT 39 ACCO7415/c LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM	Db 93843
to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases. *NOTE: This is a 'working draft' sequence. It currently consists of 103 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved. 1 1006: gap of unknown length 1302: contig of 226 bp in length 1301: contig of 225 bp in length 1860: contig of 429 bp in length 1861: contig of 463 bp in length 1861: 2400: gap of unknown length 1861: 2401: gap of unknown length 1864: 2895: contig of 463 bp in length 1864: 2895: contig of 463 bp in length 1864: 2895: contig of 463 bp in length 1864: 2895: contig of 412 bp in length 1865: 3478: contig of 412 bp in length 1866: 2975: gap of unknown length 1866: 2975: gap o	Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and Rubin, G.M. Direct Submission Submitted (28-APR-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA On Mar 17, 2000 this sequence version replaced gi:7159347. For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.pro//genome).	Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J. M., Park, S., Pfelffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Sequencing of Drosophila melanogaster Unpublished L. Unpublished 2 (bases 1 to 198282) E. 2 (bases 1 to 198282) S. Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Humasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, R., Lewis, S., Li, D., Monoran, M. A., Marcha, R., Kim, E., Lee, R., Lewis, S., Li, D., Monoran, M. A., Marcha, R., Kearney, L., Richards, M., Moshins, R.A., Humstin, S., Li, D., Monoran, M. A., Marcha, R., Kearney, L., Rim, E., Lee, R., Levis, S., Li, D., Monoran, M. A., Marcha, R., Kearney, L., Rim, E., Lee, R., Levis, S., Li, D., Monoran, M. A., Marcha, R., Kang, R	Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea, Drosophildae; Drosophila. 1 (bases 1 to 198282) 1 (classes 1 to 198282) 1 (classes 1 to 198282) Celniker, S. E., Agbayani, A., Arcaina, T. T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Boyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Harris, R., Karra, K., Honghari, S.R., Karra, K., Harris, M.L., M., L., Harris, M.L., Harris, M.L., Harris, M.L., Harris, M.L., M., L., Harris, M.L.,	AC007415 AC007415 Drosophila melanogaster chromosome 2 clone BACR05A24 (D603) RPCI-98 05.A.24 map 41C-41D strain y; cn bw sp, *** SEQUENCING IN PROGRESS ***, 103 unordered pieces. AC007415 AC007415.11 GI:7259656 HTG; HTGS_PHASE1. Drosophila melanogaster (fruit fly) Drosophila melanogaster (fruit fly) Bukaryota; Metazoa; Arthropoda; Hexapoda: Insecta: Prervoora.	
14642 146642 147806 147806 147806 148191 148271 149252 149335 149335 150047 151029 151109 151109 151109 152456 152536 153285 153285 153285 154281	* 6297 * 6297 * 7217 * 7225 * 8619 * 8619 * 9477 * 9485 * 11206 * 11216	3110 3110 3522 4005 4008 4876 4884 4884 5265 5265 5818	2087 2087 2095 2495 2503 2849 2849	652 777 777 924 1216 1216 1426 1426 1427 1428 1428 1429 1429 1429 1429	* 555 * 563
148641: CONTIG OF 1848 146721: gap of unknown 147885: gap of unknown 148190: contig of 1084 148270: gap of unknown 148270: gap of unknown 149254: contig of 984 149334: gap of unknown 150126: gap of unknown 150126: gap of unknown 151108: gap of unknown 151796: gap of unknown 152455: contig of 608 151796: gap of unknown 152455: contig of 669 15284: gap of unknown 152455: contig of 659 153204: contig of 659 153204: gap of unknown 153204: contig of 659 153204: contig of 669 153204: gap of unknown 153480: gap of unknown 154360: gap of unknown 154360: gap of unknown 156328: contig of 1296 156328: contig of 592 156408: gap of unknown 156328: contig of 592 156408: gap of unknown 157366: contig of 592 156408: gap of unknown 157366: contig of 592	72175: contig of 9199 72255: gap of unknown 86109: contig of 13854 86189: gap of unknown 94772: contig of 8583 94852: gap of unknown 112088: contig of 17236 112168: gap of unknown 128075: contig of 15907 128175: gap of unknown	35146 gap of unknown 3526 gap of unknown 40849 contig of 523 40929 gap of unknown 48761 contig of 7832 48841 gap of unknown 52656 contig of 3815 52736 gap of unknown 52736 gap of unknown 58268 gap of unknown 62896 contig of 4628	20954; contig of 2566 bp 20954; gap of unknown leng 24951; contig of 3997 bp 325031; gap of unknown leng 25031; gap of unknown leng 28493; contig of 3462 bp 331026; contig of 2453 bp 331026; contig of	7697: Contig of 1174 bp in 7777; gap of unknown length 9243: contig of 1466 bp in 9323: gap of unknown length 12162: contig of 2839 bp in 12242: gap of unknown length 14263: contig of 2021 bp in 14343: gap of unknown length 16184: contig of 1761 bp in 16184: contig of 2044 bp in 16184: gap of unknown length 1828: contig of 2044 bp in 161808: gap of unknown length 1828: contig of 2044 bp in 161808: gap of unknown length 1828: contig of factor in factor	5629: gap of unkr 6443: contig of 8 6523: gap of unkr

Z

```
RESULT 40
AC013831
LOCUS
                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 18
                                                                                                                                                                             146075
                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                       18;
                AC013831
                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                             CATCGCTCTCGTCGCTGC 146058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                173834
173914
174941
1757021
175733
175813
176896
176976
177583
17763
17763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          171850
172399
172479
173201
173281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       170148
170905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   166184
166264
167264
167344
167884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               165867
165947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               163545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162236
162543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161497
161577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            157347
157828
157908
158994
159074
159317
159397
159397
159397
159837
160698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      170985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169481
169561
170068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        168419
168720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  168339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              165093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 163045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 162623
                                                                                                                                                                                                                                                                                                34.6%; S
llarity 100.0%;
Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .65173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      68800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157827: contig of 157827: gap of u 158993: contig of u 159973: gap of u 159936: contig of u 159956: contig of u 159956: gap of u 160777: gap of u 161376: gap of u 161376: contig of u 159387: contig of u 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       166263: gap of 167243: gap of 167243: gap of 167343: contig 167343: contig 167563: gap of 168338: contig 168418: gap of 168719: gap of 169480: contig 170067: contig 170067: contig 170147: gap of 171169: contig 171248: gap of 171249: gap of 171249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         163544:
163544:
163624:
165092:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 165866:
165946:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  165172:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162964:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162622:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162542:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  166183:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of ga
                                                                                                                                                                                                                                                                                                    Score 18; DB Pred. No. 36; Mismatches
             201451 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 f unknown lengt...

f unknown length

inknown length

inknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g of 1468 bp in length funknown length g of 694 bp in length in unknown length g of 237 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                         f unknown length
g of 449 bp in length
f unknown length
g of 709 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown length
g of 1083 bp in length
f unknown length
g of 607 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            f unknown length
g of 1000 bp in length
f unknown length
g of 540 bp in length
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     f unknown length
g of 1027 bp in 10
f unknown length
f on 712 bp in lei
g of 712 bp in lei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              f unknown length
g of 301 bp in le
f unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       f unknown lengtl
g of 549 bp in
f unknown lengtl
g of 722 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown length
of 1086 bp in
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 757 bp in lounknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 861 bp in lounknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 360 bp in length unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown length
of 553 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of 785 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown length
of 507 bp in le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown lengt
of 375 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown lengt
of 579 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of 243 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 681 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 500 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 342 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 719 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 481 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                  DB 2; Length 198282; 36;
             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
             linear
             HTG 15-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (15-MAR-2002) Drosophila Genome Center, Lawrence Berkeley, Laboratory, MS 64-121, Berkeley, CA 94720, USA
On Mar 15, 2002 this sequence version replaced gi:7259652.
For further information about this sequence, including its location and relationship to other sequences, please visit our sequence archive Web site (http://www.fruitfly.org/sequence/) or send email to bdgp@fruitfly.berkeley.edu. All contigs in this submission meet the following cutoffs: length >= 200 bases.

* NOTE: This is a 'working draft' sequence. It currently consists of 136 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are unknown.

* This record will be updated with the finished sequence will sequence will be updated with the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, F. Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, F., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Woshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 201451)

Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, F.

Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,

Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,

Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, F.

Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B.,

Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B.,

Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D.,

Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M.

Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Inse
Neoptera; Endopterygota; Diptera; Brachycera;
Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 201451)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster chromosome 2 clone BACR12A16 (D1172) RPCI-98 12.A.16 map 40D-40D strain y; cn bw sp, *** SEQUENCING PROGRESS ***, 136 unordered pieces.
AC013831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, F Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hinkle, A., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, F., Kearney, L., Lee, B., Lewis, S., Li, P., Ling, H., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Richards, S., Sethi, H., Svirskas, R.R., Wan, K.H., Webster, D., Woolley, P., Yang, S., Yee, M., Yu, C. and Rubin, G.M. Sequencing of Drosophila melanogaster Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Laboratory, MS 64-121, 3 (bases 1 to 201451)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (15-NOV-1999) Drosophila Genome Center, Lawrence Berkeley Laboratory, MS 64-121, Berkeley, CA 94720, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HTG; HTGS_PHASE1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC013831.13 GI:19482321
                                                                                                                                                                                                                                                                                                                                                                                                                           as soon as it
be preserved.
                                                                                                                                 623
703
1320
1400
2019
2099
2697
2777
                                                                                                                                                     2: contig of 622 bp in length
2: gap of unknown length
9: contig of 617 bp in length
9: gap of unknown length
9: gap of unknown length
6: gap of unknown length
6: contig of 598 bp in length
6: gap of unknown length
6: gap of unknown length
gap of gap of contig
                                                                              g of 645 bp in re-
                           unknown length
of 577 bp in length
unknown length
   513 bp
      length
                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Insecta; Pterygota; era; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blazej,R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Blazej, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Karra, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Karra, K.,
```

밁

```
4672
4751 ggp of unknown length
5591
5597 ggp of unknown length
6224
6223 ggp of unknown length
6224
6223 ggp of unknown length
7046
7046
7046
7046
7046
7059 contig of 642 bp in length
6266
7045 ggp of unknown length
7040
7059 contig of 612 bp in length
6261
6262 ggp of unknown length
6262 ggp of unknown length
6263 ggp of unknown length
6264 ggp of unknown length
6265 ggp of unknown length
6266 ggp of unknown length
6266 ggp of unknown length
6267 ggp of unknown length
6268 ggp of unknown length
6269 ggp of unknown length
6269
```

유양	3 1110																																				
	Query M Best Lo Matches																																				
21 106212	y Mat Loca hes																																				
	ch 1 s	* *			* *	•	• •	• •				•	* *	*		•	*	• •	*	* *	*	٠.	•		• •		• •	٠	٠.		• ;	• •	•			٠	• •
CATC	imil ; c		S O		лoп	UT U	n un	15	UT I	nσ	15	<u>, , , , , , , , , , , , , , , , , , , </u>	14	14	14	14	14	4. 4	. 4.	14	.4.	144	144	144		143	1 1	142	1 1 4	14	14	1 14	13	<u>μ</u> μ	13	13	12
6CTC	larit	4662		72	99	91	2 22	1640	9	0223	014	949	879	871	809 801	733	25	2 2	668	540	536	8 2	12.5	411	22	ω,	Ω̈́	46	9	2	121	05.2	955	947	S	5	1097
CATCGCTCTCGTCGCTGC	y rvat		<u> </u>					, ,					. بر د						— •													- , -				ь.	
CGCCC	34.6 100. ive	546	i i i i	540	536	52	52	L5163 L5222	52	50	50	5 4	49	4	L4809 L4871	4.8	14733	4 6	46	4 4				14411		437	432	425	420	419	412	406	405	ω (4 95 4	386	385	374 276
	op	ω :-	Ξ:						9 .		2			4	4					n (51	7:	7			. 0		••			9	œ o					2 :	79:
38 10622	Score Pred 0, Mi	ont ont	מק	on t	an e	ap	שי	gap	27	" 三	gap	Cont	Cont	gap	gap		gap	gap	Cont	Cont		gap		gap	gap	cont	cont	σ:	gap	2,	ap כיונ	שיַ	84	gap	аp	cont	a g
29	re 1 ed. Mism	ig c	ıαn	ω,	'nΩ	'nŒ	m	_	Q r	÷Ω	mi	2. 0	9	P.	Ω ++	19	e i	. E	9	- 6	S.	μ. O	, G	g F	. 0	9	19	2	÷ 6	Ω	e d	3 1	ω	6	, c	ω,) i f i o
	18; 1. No. smatch	unknown of 212 k	of 470 l	of 31	of 641	봈	, Ξ	unknown)f 56	יי האים האים	Α.	of 646	of 6:	inkno	f Ekn)£ 68	unknown	unknown	of 249	ř.	ж.	of 509 h	of 60	unknown	unknown	of 406 b	of 6	unknown	unknown	of 6.	<u> </u>	, E	of 9	֓֞֜֜֜֜֞֜֜֜֜֟֓֓֓֓֓֓֜֟֜֓֓֓֓֓֓֓֓֡֓֜֟֜֜֓֓֓֡֓֡֓֡֡֡֡֡֡֡֡	몵	ř 1	of 16
	DB ; 36; hes	la bp		O .	5 5	town le		9 5	53 5			46	522 b	Twn.	LWI by	34 b	o a	Ę	249 b		•	29 25	604 bp	מ מ	Š	06 p	77 b		- S	71 b	O E	E	63 b	OWN D	_		
	2;	lengt o in	Lengt p in	p in l	p in	ength	ğ	n length bo in le	o in	p in	length	o in	bp in le	unknown lengt	leng	of 684 bp in l	n length	n lengtl	pin	bp in	length	n length bo in l	'n	n length	lengti	p in	bp in le	lengt	leng	bp in	n lengti	lengt	nig	n lengti	lengt	bp in	bp
	Length ; Ind	~		n	len	th en	-	len En	len	len	5	- E		7) Th	1en	ביי	7 5	lengt	5	÷.	- ∺	1er	th	, , ,		ler	א כב							- 5		
		ength	ength	ngth	length	Lengen	, ,	1 length	ength	ength	. ;	enath	length		<u> </u>	length	h Tengcn	, ,	1gth	length		art)	length	engch	,	ngth	ength	מואליו	į	ength	.engcn	, ,	ength	length	· •	length	length
	014																			3																5	ᇤ
	51;																																				
	Сарв																																				

Search completed: November 13, 2003, 10:26:37 Job time: 2042 secs

0;

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Word size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Listing first 1000 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
      19
17
17
17
16
16
16
                                                                                                                                                                                       N_Geneseq_19Jun03:*

1: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*

2: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*

3: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:*

4: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*

5: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*

6: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*

7: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*

8: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*

9: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*

10: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1989.DAT:*

11: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

12: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

13: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

14: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:*

15: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:*

16: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

17: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

18: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

19: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

20: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

21: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

22: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

23: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

24: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

25: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

26: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

27: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

28: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

29: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

20: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

21: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*

22: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001A.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-1
52
1 atgcagttctctca
                                                                                                 Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OLIGO_NUC Gapext 60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             November 13, 2003, 08:53:26; Search time 217 Seconds (without alignments) 646.870 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2552756 seqs, 1349719017 residues
     atgcagttctctcacgctct.....cgctgccggcctcgccagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
     3416
1392
2684
4310
276
357
438
598
                                                                                                    DΒ
     23
23
23
23
23
23
              AAZ52247
AAD50522
ABL19972
ABL15450
AAA31959
AAA31675
AAA31705
                                                                                                    ij
                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5105512
            Maize glycine-rich
Mycobacterium aviu
Drosophila melanog
Drosophila melanog
Plant microsatelli
Plant microsatelli
Plant microsatelli
                                                                                               Description
   encoding
   nove
           0000
                                                                                    O
                                                                                                                             0 0000
                                                                                                                                                                                                                00000
                                                                                                                                                                                                                                                                                                    000
                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               იიი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O
  ABQ84697

AAH17696

AAH16752

AAA16680

ABA99189

ABL65208

ABL67990

ABL67990

ABL08033

ABT17712
                                                                                                      ABT20720
ABS67741
ABT20122
ABL20539
ABZ15173
ABL02831
ABL17476
AAS51556
                                                                                                                                                                                                                                 ABS07268

AAK80662

AAH105980

AAF12705

AAH105899

AAH105899

ABQ90246

AAI58291

AAD00690

AAS41256

AAD00690

AAS41256

ABV230630

ABV230630

ABV230630

ABV230630
                                                                                                                                                                                                                                                                                                                                                                                   ABA58638
ABA27633
AAK06770
AAK32483
AAI16089
AAI38312
ABS32191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH1483
ABL14163
AABL548163
ABL14186
AAD52898
ABL152898
ABL152898
ABL74833
ABL74833
ABZ17641
                                                                                                                                                                                        AAC33695
AAC35595
                                                                                                                                                                                                              AAH46450
ABQ60922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD38695
ABV99421
ABV99422
AAK99609
ABV99420
AAF16203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAC35333
AAS69014
AAD28124
AAF76853
ABK35806
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAI90273
AAC02001
```

a

 α α α

Human NOVX polynuc Penicillium Chryso Human hippocampal Arabidopsis thalia Arabidopsis thalia Aspergillus fumiga Human intracellula Aspergillus fumiga Human intracellula Drosophila melanog Arabidopsis thalia Drosophila melanog Pseudomonas aerugi Human CDNA sequenc Human HCCA2 encodi Human HCCA1 encodi Lung cancer relate Ovary cancer relate Ovary cancer relate Probe #6099 for ge
Human brain expres
Human bone marrow
Probe #6022 for ge
Human liver single
Human immune/haema
Human cDNA clone (
Aspergillus oryzae
Human cDNA clone (
M. capsulatus gene
Human polynucleoti
Human Hydrolase pr
cDNA encoding nove
Human prostate exp
Human prostate exp DNA encoding novel prosophila melanog Human tweety homol prosophila melanog Bifidobacterium lo Corn tassel-derive Human CDP-mannose \$2 subtraction lib Human LP220 secret Human NOV44b codin Human NOV44c codin MDDT related human Aspergillus fu cDNA sequence DNA encoding novel M. tuberculosis an M. tuberculosis re Human DNA encoding novel Human polynucleoti Human GDP-mannose Human cDNA encodin Human Mycobacterium tube Human polynucleoti Drosophila melanog Human NOV44a codin Human prostate can Human colon cancer Human secreted pro Arabidopsis thalia secreted pro leucine-rich fumi

DAM. STORED STATE AND ADMINISTRATION OF THE STATE AND ADMINIST	149 150 0 151 0 153 154	C 144 C 145 C 146 C 147	14 14 14	139	1 1 1	c 134	13	c 130	128 129	C 126	12	121	c 121 c 122			c 115		112	1110	c 109	107		C 103								င 90 91			ი 86		0 0 83 83
Mail	, 44444 , 4444	14 14 14	14 14	14	14	14	14 14	14 14	14	15 14	1 5 5	15	15	15 15	15 15	15	15	7 5 5	15 15	15	15	15	15	150	31	15	150) 15	15	15	ր Մ	15	1 5	15	15	J. L
MAY-9900 DAN, encoding, bio C. 155 MAY-9900 DAN, encoding, below C. 15	00000000			999	, 0, 0	ຸດຸດ	9.0	9.9	9.9	6 G		- 60 (D (D	œ œ	œ œ			000	œ œ	00 0	000	P (B	œ œ	000		œ œ		ю œ			œ œ	00	œ œ			œœ
12 12 12 12 12 12 12 12	399 427 438 446 513	368 370 384 390	314 345 368	308	300	284	266 280	234 234	135 208	1152	41152	40376				71989	49561	44377	38110	28676	11847	10715	10676	9926	7382	7382	6381	6059	5721	5277	4649	4382	4198	3963	3830	3778
MAR AND Depending a bio Depending and a bio Depending an										9		n Ui																								
ililus funiga bio c 155 14 26,9 552 22 AANSIMila melanog c 155 14 26,9 552 24 ABO6688 ANIII a melanog c 156 14 26,9 552 24 ABO6688 ANIII a melanog c 156 14 26,9 552 24 ABO6688 ANIII a melanog c 156 14 26,9 552 24 ABO6688 ANIII a melanog c 156 14 26,9 552 24 ABO6688 ANIII a melanog c 156 14 26,9 512 25 AANSIMila melanog c 156 14 26,9 512 25 AANSIMila melanog c 157 14 26,9 714 21 AANSIMila melanog c 158 14										AA19968 AAH63071	AA19968	AAI9968																								
C 155 C 156 C 157 C 158 C 159 C 179	an polynucleot coli prolifera mays DNA frag an ORFX polynu at Mlo homolog mays DNA frag mays DNA frag	liata t ribos -manno	/ltrang :reted liata (oding mur cDNA, S NA isola	ltransfe	/ltransfe /ltransfe	260 cDNA ltransfe	rian	Human secreted pro	0	ם ס	י שי	ium spe	bacteri bacteri	eosporu	ium cel	immune/hae	ide syr	erium t	Human nervous syst Human immune/haema	Drosophila melanog	Drosophila melanog	Human prostate exp Human prostate exp	Human ASH1 cDNA Ge	ophila me	ordetella pe rosophila me	equence encoding	hemically treate	denyl cyclas	rosophila me	equence encod uman ORFX ORF	rosophila mel	rabidopsis enoyl	rosophila mel rosophila cel	rosophila mel	encoding a bi ergillus fumig
4 26.9 522 22 ABAN194 4 26.9 581 21 ABO668 2 26.9 612 24 ABO668 4 26.9 617 25 ABC24 4 26.9 617 27 ABC26 4 26.9 641 23 ABC28 4 26.9 641 23 ABC28 4 26.9 641 24 ABO658 4 26.9 768 24 ABO658 4 26.9 768 24 ABO658 4 26.9 768 24 ABO658 4 26.9 789 23 ABL100 4 26.9 789 23 ABL100 4 26.9 789 23 ABL100 4 26.9 1080 21 AAC3339 4 26.9 1080 21 AAC3339 4 26.9 1190 21 ABC90 4 26.9 1190 22 ABD3130 4 26.9 1190 22 ABC90 4 ABC90 4 26.9 1190 22 ABC90 4 26.9 1190 22 ABC90 4 26.9 1190 22	22222222						205				198	196		192	190 191	188 189	187				0.0	. n	G	-			170		9	· 00 ·	16	16	16	15	15	15
9 522 22 ABA1944 9 522 22 ABA1944 9 522 22 AAK8300 9 522 22 AAK8300 9 522 22 AAK8314 9 522 22 AAK314 9 661 21 AAF0866 9 661 21 AAF0866 9 661 22 AAF297 9 661 22 AAF297 9 661 22 AAF297 9 661 23 AAF0867 9 661 23 AAF0867 9 661 24 AB221 9 662 24 AB221 9 663 24 AB2284 9 768 24 AB299 9 768 27 AAF0864 9 1000 21 AAF1310 9 9 768 24 AB299 9 9 768 27 AAF0864 9 1000 21 AAF0864	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1111, 1444.	144	114 144	14	14	14.	14.	14	14	14	14	114	114	14 14	14 14	14	114	14	14 14	14	14.	14	14	14	14	14	14	14	14	14	14	14	14 14	14	14 14
522 22 ABA194 522 22 ABA194 522 22 AAK8300 522 22 AAK8300 522 22 AAK83104 522 22 AAK83104 522 22 AAK83106 522 24 ABG668 522 24 ABG668 523 24 ABG668 616 21 AAG7666 617 19 AAV2711 617 12 AAG7366 644 24 ABG1233 6612 25 AGC4362 644 24 ABG1233 6612 25 AAG76361 644 24 ABG1233 768 24 ABG658 664 24 ABG968 664 25 AAG76361 714 21 AAG7361 714 21 AAG7361 718 21 AAG7361 718 22 AAB6938 718 22 AAB6938 718 22 AAB6938 718 22 AAB7036 718 23 ABL1000 718 24 ABG731 718 25 ABG7131 718 27 AAG7367 718 28 ABG7131 719 27 AAG7367 719 28 ABG7131 719 29 AAG7367 719 29 AAG7367 719 21 AAG7367 719 22 AAG7367 719 21 AAG7367 719 22 AAG7367 719 22 AAG7367 719 23 ABL1333 719 24 ABG7367 719 24 ABG7367 719 25 ABZ7366 719 26 AAG7367 719 27 AAG7367 719 28 ABG7367 719 29 AAG7367 719 29 AAG7367 719 21 AAG7367 719 21 AAG7367 719 22 AAG7367 719 23 ABL1333 719 24 ABG7367 719 24 ABG7367 719 25 ABZ7366 719 26 AAG7367 719 27 AAG7367 719 28 ABG7367 719 29 AAG7367 719 29 AAG7367 719 21 AAG7367 719 21 AAG7367 719 22 AAG7367 719 22 AAG7367 719 23 ABL1333 719 24 ABG7367 719 25 ABZ7367 719 27 AAG7367 719 28 ABG7367 719 29 AAG7367 719 29 AAG7367 719 29 AAG7367 719 21 AAG7367 719 21 AAG7367 719 22 AAG7367 719 22 AAG7367 719 23 ABL1333 719 24 ABG7367 719 25 ABZ7367 719 27 AAG7367 719 28 ABZ7367 719 29 AAG7367 719 29																			•																	
22 ABA194 22 AAK8300 22 AAK8300 22 AAK8300 22 AAK8300 22 AAK8300 22 AAK8314 22 AAK8300 22 AAK8300 22 AAK8300 22 AAK8300 22 AAK8300 23 ABC968 24 AB0668 24 AB0668 25 ACC462 26 ACC462 27 AAC6362 28 ABC4200 29 AAC6362 20 ABC4200 20 ABC658 20 ABC4200 20 ABC653 20 ABC4800 20 ABC658 21 AAC682 22 AAB06909 23 ABC1800 23 ABC1800 24 AB06199 25 ABC4056 27 AAC663 28 ABC4056 29 AAC663 20 AAC663 21 AAC663 22 AAC663 23 ABC180 24 AB09090 25 ABC4056 26 ABC4056 27 AAC663 28 ABC4056 29 AAC663 20 AAC663 21 AAC663 22 AAC663 23 ABC130 24 AB09090 25 ABC4056 26 ABC4056 27 AAC663 28 ABC4056 29 AAC663 20 AAC663 21 AAC663 22 AAC663 23 ABC130 24 AB09090 25 ABC608 26 ABC130 27 AAC663 28 ABC130 29 AAC663 20 AAC663 21 AAC663 22 AAC663 23 ABC130 24 ABD3766 25 ABC133 26 ABC133 27 AAC663 28 ABC133 29 AAC67 20 AAC67 21 AAC67 22 AAC67 23 ABC133 24 ABC3160 25 ABC133 26 ABC3163 27 AAC67 28 ABC3163 29 AAC67 20 AAC67 21 AAC67 22 AAC67 23 ABC133 24 ABC3163 25 ABC133 26 ABC3163 27 AAC67 28 ABC3163 29 AAC67 20 AAC67 20 AAC67 21 AAC67 22 AAC67 23 ABC133 24 ABC3133 25 ABC133 26 ABC3133 27 AAC67 28 ABC3133 29 AAC67 20 AAC67 21 AAC67 22 AAC67 23 ABC133 24 ABC3133 25 ABC3133 26 ABC3133 27 AAC67 28 ABC3133 28 ABC3133 29 AAC67 20 AAC67 21 AAC67 22 AAC67 23 ABC3133 24 ABC3133 25 ABC3133 26 ABC3133 27 AAC67 28 ABC3133 28 ABC3133 29 AAC67 20 AAC67 21 AAC67 22 AAC67 23 ABC3133 24 ABC3133 25 AAC67 26 ABC3133 26 ABC3133 27 AAC67 28 ABC3133	174 174 180 180 185 193 193	169 171 172	169	161 161	149	121	117	116	112	108	105	102	92	999	87	8 8 5	84	8 9	80	78 79	78	76	71 71	66	6.4	0 A	61	1 61	61	60	55	52	J (2)	52	52	s tr
ABA194 ABA194 ABA194 ABA194 ABAS314 AAAS314 AAAS314 AAAS314 AAAS314 AAAS314 AAAG366 ABC666 AAAC666 AAAC666 AAAC666 AAAC666 AAAC666 AAAC666 AAAC66 AAC66 AAAC66 AAAC66 AAAC66 AAAC66 AAAC66 AAAC66 AAAC66 AAAC66 AAAC																																				
	AAF6/84 ABZ1364 ABL2455 AAL3992 AAZ3527 AAH4595 AAH1459	ABZ1483 ABX9705 ABZ7806	ABL5016 ABL0354	ABL0877 AAH6738	AAD3609 ABZ1133	AAC4367 AAF6084	AAC3466	AAD3767	ABQ9090	AAC6637	AAS6594 AAF1380	ABZ8329	ABL2138	AAC4567	AAC5427	AAC4826 AAC3874	ABQ4195	ABQ4195	ABQ7997	AAS5145 ABL1006	AAL2399	ABS6495	AAF131	ABQ3989	ABQ3989	ABZ5504	AAV2719	ACC462	ABZ420	AAC464	AAH297	ABQ6681	AAS3149	AAK8306 AAS3149	AAK830	ABA1949

Human nervous syst
Human immune/haema
Human immune/haema
Human immune/haema
Human DNA for a no
Human DNA for a no
Human DNA for a no
Human polynucleoti
Drosophila melanog
Pusarium venenatum
Arabidopsis thalia
Aspergillus oryzae
Drosophila melanog
Oligonucleotide fo
Arabidopsis thalia

Sequence from prom Zea mays DNA fragm Pseudomonas sp exp Human PGC-3 cDNA f Human PGC-3 cDNA f Human polynucleoti Drosophila melanog C glutamicum codin Paneth cell expres Human paneth cell Drosophila melanog Drosophila melanog Drosophila DevG20 Arabidopsis thalia Human Nov28a cDNA Human breast speci Corynebacterium glarabidopsis thalia Drosophila melanog cDNA encoding the Arabidopsis retroe Human paneth cell Human cDNA sequenc G protein coupled

00000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	228
	14
00000000000000000000000000000000000000	
20085 20085 20086 20086 20133 20133 20133 20133 20134	2036
22222222222222212222222222222222222222	22
AAH23690 AAAC25823 AAAC29828 AAAC29828 AAAC29828 AAAC1432 AABL18797 ABL128797 AABL28797 AABL28434 AAAC27285 AAAD35184 AAAC27285 AAAD35184 AAAC62803 AABC117633 AABL18035 AABL18037 AABL18037 AABL18037 AABL266762 AABC38691 AAG628676 AABC38691 AAG628676 AABC38691 AAG628676 AABC386883 AAC64762977 ABL28756 AABC3986 AABC3977 ABBC3976 AABC3977 ABBC3977 ABC3977 ABBC3977 ABBC3977 ABBC3977 ABBC3977 ABBC3977 ABBC3977 ABBC3977 ABBC3977 ABBC397 ABBC397 ABBC397 ABBC397 ABBC397 ABBC397 ABC397 ABBC397 ABBC	AAH74908
Human Human Human Human Human Human Drosoj M. prim Metal Drosoj Shrim Drosoj Drosoj Drosoj Nuclee Drosoj Orthoj Human Human Human Human Human Human Human Drosoj Drosoj Orthoj Human	cDi
tumour c tumour c tumour c carbase e CARD-9 e s simple c conna me phila mel phila mel phila mel phila mel phila mel phila mel phila mel gillus fi gillus fi gillus fi conach scoreto phila mel phila mel	DNA sequence
support suppor	isol
	_
000 0000 0000 0000 0000 0000 000000000	c 301
	14
	•
14. 26.9 6629 2.14. 26.9 6629 2.26.9 77140 2.26.9 77140 2.26.9 11169 7.25.0 122 2.26.9 122	.9 5494
14. 26. 9 6.236. 9 6.	.9 5494 23 ABL1395
26.9 5509 24 ABA526601 26.9 5612 24 ABL57471 26.9 6629 23 ABL157471 26.9 6629 24 ABL57471 26.9 6629 21 AAA752395 26.9 6629 22 AABL29950 26.9 6625 22 AAF98724 26.9 6625 23 ABL19750 26.9 6626 22 AAF98724 26.9 6690 22 AAF98724 26.9 6906 22 AAF98724 26.9 6907 22 AAF98724 26.9 6908 24 ABK64741 26.9 6908 24 ABK64741 26.9 7140 24 ABK64741 26.9 7140 24 ABK64741 26.9 7740 24 ABK61114 26.9 7740 24 ABK61114 26.9 7740 24 ABK611114 26.9 7740 24 ABK611114 26.9 7740 24 ABK611114 26.9 7740 23 ABL1080 26.9 1140 23 ABL16708 26.9 1140 23 ABL16708 26.9 14938 23 ABL268150 26.9 14938 23 ABL268150 26.9 14938 23 ABL268150 26.9 14938 23 ABL268150 26.9 14938 23 ABL26816 26.9 14938 23 ABL268170 26.9 123456 25 AAF38050 27.0 27.0 AAF3805 27.0 1124 22 AAF38031 27.0 124 22	.9 5494 23 ABL1395
26.9 56.9 24 ABA92640 26.9 66.39 21 AAA75234 26.9 66.39 21 AAA75234 26.9 66.39 21 AAA75234 26.9 66.39 21 AAA75234 26.9 66.30 22 AAF99714 26.9 66.30 22 AAF99724 26.9 66.30 22 AAF99724 26.9 66.30 22 AAF99724 26.9 66.30 22 AAF99724 26.9 69.00 22 AAF99724 26.9 7140 24 ABA66741 26.9 7140 24 ABA66741 26.9 7140 24 ABA66741 26.9 7140 24 ABA66741 26.9 7140 24 ABA651223 26.9 7140 24 ABA651223 26.9 7140 24 ABA651223 26.9 7140 25 AAF99724 26.9 7140 26 ABA75234 26.9 7140 27 ABA66741 26.9 7140 27 ABA66741 26.9 7140 28 ABA75234 26.9 7140 29 ABA16749 26.9 7140 29 AAA752541 26.9 7140 29 AAA	.9 5494 23 ABL13956 D
### 186.9 5602 24 ABLU7501 ### 186.9 5612 24 ABLU7501 ### 186.9 6209 23 ABLU7501 ### 186.9 6209 23 ABLU7502 ### 186.9 6209 23 ABLU75030 ### 186.9 6209 23 ABLU75030 ### 186.9 6209 23 ABLU75030 ### 186.9 6209 24 ABLU75030 ### 186.9 6209 25 ABLU75030 ### 186.9 6209 26 ABLU75030 ### 186.9 6209 27 ABLU75030 ### 186.9 6209 28 ABLU75030 ### 186.9 6209 28 ABLU75030 ### 186.9 6209 28 ABLU75030 ### 186.9 6209 29 ABLU7703 ### 186.9 6209 20 ABLU7703 #	.9 5494 23 ABL1395

0 0	00000000	aa a aaa a	0 0 0	00 0
427 428 430 431 433 433			00000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			555555555555555555555555555555555555555
AAS65034 AAS78910 ABQ91493 ABZ52535 AAT49174 ABX40789 AAF66457 ABX54028	ABA72477 ABA38242 ABA3820901 AAK47053 AAK47053 AAR152890 AAR67121 ABS46814 ABS21293 ABV13403	AAH65119 ABQ56042 ABZ14270 ABZ14270 ABQ07541 ABQ085973 AAQ06505 AABX250549 AAC25715 ABX55362 ABX18746 AABN18746 AABN18746 AABN18746	ABLT3344 ABN21765 ABN219673 ABN26515 ABN264112 ABLT72164 ABN27704 ABLT7294 ABLT7294 ABLT7294 ABLT7294 ABLT73464 ABLT1970 ABLT1970 ABLT1970 ABLT3464	AAK1868 AAK44619 AAI24937 AAI50599 ABS14079 ABS18056 AAT24607 ABV88956 AAT24607 ABV88956 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732585 ABV732583 ABV732583 ABV732583 ABV732583 ABV732583 ABV732583 ABV755943 ABV755943 ABV755943
DNA er DNA er M. cap Aspers Partia Boving Novel Boving	Human Probe Human Human Probe Novel Human Human	C glut Human Arabic Encode Human Human Human Human CDNA e	Human Human Human Human Corn Corn Human Corn Human Human Human Human	Human Human Probe Probe Probe Human
ncodin ncodin psulat gillus al DNA EST human	foeta #1670 brain bone #2157 human liver genom	ovari lopsis prost prost lopsis spro GDP-m GDP-m GDP-m GDP-m GDP-m	ORFX ORFX ORFX ORFX ORFX ORFX ORFX ORFX	brain bone m #14870 #1285 liver: genome gene s colon c
ig noving	llliv le for marro 6 use le oly eingele-der	m cod an ate e ate e thall tein tean polyn polyn polyn no	polyn polyn polyn polyn rived rived -deri annos -deri -deri -deri -deri -deri	marrow 70 for g 95 used 25 used 25 used 25 used 26 cancer 10 cancer 11 cancer 11 cancer 12 cancer 13 cancer 13 cancer 14 cancer 15 cancer 16 cance
el el ne ae ae e e	es es d	ve e Xia itin	9 7 9 9 4 9 9 7 4 6 .	A A A A A A A A A A A A A A A A A A A
500 6 502 6 503 6 506 5 506	0 4 4 9 3 0 4 4 9 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C C C C C A 48 0 C C C A 48 8 2 2 4 8 8 8 5 4 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		0 C C C C C C C C C C C C C C C C C C C
500 501 502 503 504 505 506	44444444444444444444444444444444444444	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	465 466 466 466 470 470 472 473 476 476	
500 13 25. 501 13 25. 502 13 25. 503 13 25. 504 13 25. 505 13 25. 506 13 25. 507 13 25.	491 13 25 492 13 25 493 13 25 494 13 25 496 13 25 496 13 25 497 13 25 498 13 25 498 13 25 25 25	479 13 480 13 481 13 482 13 482 13 483 13 484 13 485 13 486 13 486 13 487 13 488 13	465 13 25. 466 13 25. 468 13 25. 469 13 25. 470 13 25. 471 13 25. 472 13 25. 475 13 25. 476 13 25. 477 13 25.	447 448 449 450 450 451 452 453 453 453 453 453 453 453 13 25 455 13 25 456 13 25 457 13 25 15 16 16 17 18 18 18 18 18 18 18 18 18 18
500 13 25.0 501 13 25.0 502 13 25.0 503 13 25.0 504 13 25.0 505 13 25.0 507 13 25.0	491 13 25.0 492 13 25.0 493 13 25.0 494 13 25.0 495 13 25.0 496 13 25.0 497 13 25.0 498 13 25.0 498 13 25.0	479 13 25.0 480 13 25.0 481 13 25.0 482 13 25.0 483 13 25.0 484 13 25.0 485 13 25.0 486 13 25.0 488 13 25.0 489 13 25.0 490 13 25.0	465 13 25.0 467 13 25.0 468 13 25.0 469 13 25.0 470 13 25.0 471 13 25.0 472 13 25.0 473 13 25.0 474 13 25.0 475 13 25.0 476 13 25.0 477 13 25.0 477 13 25.0	447 13 25.0 448 13 25.0 449 13 25.0 450 13 25.0 451 13 25.0 452 13 25.0 453 13 25.0 454 13 25.0 456 13 25.0 457 13 25.0 458 13 25.0 459 13 25.0 460 13 25.0 461 13 25.0 462 13 25.0 462 13 25.0 462 13 25.0 463 13 25.0 463 13 25.0
500 13 25.0 539 501 13 25.0 540 502 13 25.0 543 503 13 25.0 543 505 13 25.0 543 506 13 25.0 543 507 13 25.0 543	491 13 25.0 512 492 13 25.0 520 493 13 25.0 525 494 13 25.0 525 495 13 25.0 531 496 13 25.0 534 497 13 25.0 535 498 13 25.0 536 499 13 25.0 536	479 13 25.0 483 480 13 25.0 483 481 13 25.0 483 482 13 25.0 483 484 13 25.0 483 485 13 25.0 483 486 13 25.0 483 486 13 25.0 483 487 13 25.0 489 488 13 25.0 490 490 13 25.0 502	465 13 25.0 462 466 13 25.0 465 467 13 25.0 475 468 13 25.0 475 469 13 25.0 478 470 13 25.0 480 471 13 25.0 480 472 13 25.0 480 473 13 25.0 480 474 13 25.0 480 477 13 25.0 480 477 13 25.0 480 477 13 25.0 480 478 13 25.0 480 479 13 25.0 480 479 13 25.0 480 470 13 25.0 480 470 13 25.0 480	447 448 449 450 450 451 452 453 453 453 453 453 453 453 13 25 455 13 25 456 13 25 457 13 25 15 16 16 17 18 18 18 18 18 18 18 18 18 18
500 13 25.0 539 24 501 13 25.0 540 21 502 13 25.0 540 21 503 13 25.0 543 22 504 13 25.0 543 22 505 13 25.0 543 22 506 13 25.0 543 22 507 13 25.0 543 22	491 13 25.0 512 22 492 13 25.0 520 21 493 13 25.0 523 21 494 13 25.0 525 25 495 13 25.0 531 25 496 13 25.0 534 18 497 13 25.0 535 24 498 13 25.0 535 24 499 13 25.0 536 22	479 13 25.0 483 22 480 13 25.0 483 22 481 13 25.0 483 22 482 13 25.0 483 22 483 13 25.0 483 22 484 13 25.0 483 22 485 13 25.0 483 23 486 13 25.0 483 23 486 13 25.0 483 23 487 13 25.0 488 23 488 13 25.0 488 23 489 13 25.0 502 21 490 13 25.0 506 21	465 13 25.0 462 24 466 13 25.0 465 21 467 13 25.0 465 21 468 13 25.0 475 21 469 13 25.0 478 21 470 13 25.0 480 22 471 13 25.0 480 22 472 13 25.0 480 22 473 13 25.0 480 22 474 13 25.0 480 22 475 13 25.0 480 22 476 13 25.0 480 22 477 13 25.0 480 22 478 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22	447 13 25.0 418 25 4448 13 25.0 426 25 4449 13 25.0 428 26 450 13 25.0 428 24 451 13 25.0 428 24 452 13 25.0 438 25 453 13 25.0 438 25 455 13 25.0 438 25 456 13 25.0 439 21 457 13 25.0 441 24 458 13 25.0 442 24 458 25.0 446 22 460 13 25.0 462 22 461 13 25.0 462 22 462 13 25.0 462 22 462 13 25.0 462 22 463 13 25.0 462 22 464 124 24 458 25.0 462 22 462 26 26 26 26 26 26 26 26 26 26 26 26 2
500 13 25.0 539 24 ABL82719 501 13 25.0 540 21 AAA40272 502 13 25.0 540 21 AAA40292 503 13 25.0 543 22 ABA59936 504 13 25.0 543 22 ABA28363 505 13 25.0 543 22 AAK34085 507 13 25.0 543 22 AAK34085	491 13 25.0 512 22 AAH31699 492 13 25.0 520 21 AAC54215 493 13 25.0 523 21 AAC5328 494 13 25.0 525 25 ABZ52860 495 13 25.0 531 25 ABZ55021 496 13 25.0 531 25 ABZ55021 497 13 25.0 534 18 AAT68264 497 13 25.0 535 24 ABQ15411 498 13 25.0 535 24 ABQ15411 499 13 25.0 536 22 AAH29169	479 13 25.0 483 22 ABA29032 481 13 25.0 483 22 ABA29032 481 13 25.0 483 22 AAK07543 482 13 25.0 483 22 AAK16415 483 13 25.0 483 22 AAK16415 484 13 25.0 483 22 AAK139126 485 13 25.0 483 22 AAK139126 486 13 25.0 483 22 AAK139126 487 13 25.0 483 23 ABS31092 488 13 25.0 483 23 ABS31092 489 13 25.0 488 23 ABL11379 489 13 25.0 502 21 AAC45003 490 13 25.0 502 21 AAC45003	465 13 25.0 462 24 466 13 25.0 465 21 467 13 25.0 465 21 468 13 25.0 475 21 469 13 25.0 478 21 470 13 25.0 480 22 471 13 25.0 480 22 472 13 25.0 480 22 473 13 25.0 480 22 474 13 25.0 480 22 475 13 25.0 480 22 476 13 25.0 480 22 477 13 25.0 480 22 478 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22 479 13 25.0 480 22	447 13 25.0 418 448 13 25.0 426 449 13 25.0 428 451 13 25.0 428 451 13 25.0 438 452 13 25.0 438 454 13 25.0 438 456 13 25.0 438 456 13 25.0 438 456 13 25.0 444 458 13 25.0 446 458 13 25.0 446 458 13 25.0 462 460 13 25.0 462 461 13 25.0 462 462 13 25.0 462 463 13 25.0 462 462 13 25.0 462 463 13 25.0 462 463 13 25.0 462
500 13 25.0 539 24 ABL82719 501 13 25.0 540 21 AAA40272 502 13 25.0 540 21 AAA40292 503 13 25.0 543 22 ABA59936 504 13 25.0 543 22 ABA28363 505 13 25.0 543 22 AAK34085 507 13 25.0 543 22 AAK34085	491 13 25.0 512 22 AAH31699 492 13 25.0 520 21 AAC54215 493 13 25.0 523 21 AAC5328 494 13 25.0 525 25 ABZ52860 495 13 25.0 531 25 ABZ55021 496 13 25.0 531 25 ABZ55021 497 13 25.0 534 18 AAT68264 497 13 25.0 535 24 ABQ15411 498 13 25.0 535 24 ABQ15411 499 13 25.0 536 22 AAH29169	479 13 25.0 483 22 ABA29032 481 13 25.0 483 22 ABA29032 481 13 25.0 483 22 AAK07543 482 13 25.0 483 22 AAK16415 483 13 25.0 483 22 AAK16415 484 13 25.0 483 22 AAK139126 485 13 25.0 483 22 AAK139126 486 13 25.0 483 22 AAK139126 487 13 25.0 483 23 ABS31092 488 13 25.0 483 23 ABS31092 489 13 25.0 488 23 ABL11379 489 13 25.0 502 21 AAC45003 490 13 25.0 502 21 AAC45003	465 13 25.0 462 23 ABS31224 Hun 466 13 25.0 462 24 ABS45294 Hun 467 13 25.0 465 21 AAAB1596 N. 468 13 25.0 475 21 AAC39705 Zee 469 13 25.0 475 21 AAC39705 Zee 470 13 25.0 480 22 ABA52157 Hun 471 13 25.0 480 22 ABA52157 Hun 472 13 25.0 480 22 AAK25873 Hun 473 13 25.0 480 22 AAK35873 Prc 474 13 25.0 480 22 AAK131757 Hun 475 13 25.0 480 22 AAI31757 Prc 476 13 25.0 480 22 AAI31757 Prc 477 13 25.0 480 23 ABS25463 Hun 478 13 25.0 480 23 ABS25463 Hun 478 13 25.0 480 24 ABS00456 Hun 479 13 25.0 480 27 AAI31757 Prc 476 13 25.0 480 28 AAI31757 Prc 477 13 25.0 480 28 AAI31757 Prc 478 13 25.0 480 28 AAI31757 Prc 479 13 25.0 480 28 AAI31757 Prc 470 13 25.0 480 28 AAI31750 Pr	447 13 25.0 418 25 ABX42688 448 13 25.0 426 25 ABX45974 449 13 25.0 426 25 ABX44296 450 13 25.0 428 20 AAX21226 451 13 25.0 428 21 ABL8189 452 13 25.0 438 22 AAH290434 453 13 25.0 438 22 AAH29043 454 13 25.0 438 22 AAH29043 455 13 25.0 438 25 ABZ18971 456 13 25.0 439 21 AB062599 457 13 25.0 439 21 AB062599 458 13 25.0 441 24 ABC96892 459 13 25.0 444 22 ABL94068 458 13 25.0 462 22 AAH3820 460 13 25.0 462 22 AAH3820 461 13 25.0 462 22 AAK05903 462 13 25.0 462 22 AAK05903 463 13 25.0 462 22 AAK15714 464 13 25.0 462 22 AAK15714
500 13 25.0 539 24 ABL82719 501 13 25.0 540 21 AAA40272 502 13 25.0 540 21 AAA40292 503 13 25.0 543 22 ABA59936 504 13 25.0 543 22 ABA28363 505 13 25.0 543 22 AAK34085 507 13 25.0 543 22 AAK34085	491 13 25.0 512 22 AAH31699 492 13 25.0 520 21 AAC54215 493 13 25.0 523 21 AAC5328 494 13 25.0 525 25 ABZ52860 495 13 25.0 531 25 ABZ55021 496 13 25.0 531 25 ABZ55021 497 13 25.0 534 18 AAT68264 497 13 25.0 535 24 ABQ15411 498 13 25.0 535 24 ABQ15411 499 13 25.0 536 22 AAH29169	479 13 25.0 483 22 ABA29032 481 13 25.0 483 22 ABA29032 481 13 25.0 483 22 AAK07543 482 13 25.0 483 22 AAK16215 483 13 25.0 483 22 AAK16415 484 13 25.0 483 22 AAK139126 485 13 25.0 483 22 AAK139126 486 13 25.0 483 22 AAK139126 487 13 25.0 483 23 ABS31092 488 13 25.0 483 23 ABS31092 489 13 25.0 488 23 ABL11379 489 13 25.0 502 21 AAC45003 490 13 25.0 502 21 AAC45003	465 13 25.0 462 23 ABS31224 Hun 466 13 25.0 462 24 ABS45294 Hun 467 13 25.0 465 21 AAAB1596 N. 468 13 25.0 475 21 AAC39705 Zee 469 13 25.0 475 21 AAC39705 Zee 470 13 25.0 480 22 ABA52157 Hun 471 13 25.0 480 22 ABA52157 Hun 472 13 25.0 480 22 AAK25873 Hun 473 13 25.0 480 22 AAK35873 Prc 474 13 25.0 480 22 AAK131757 Hun 475 13 25.0 480 22 AAI31757 Prc 476 13 25.0 480 22 AAI31757 Prc 477 13 25.0 480 23 ABS25463 Hun 478 13 25.0 480 23 ABS25463 Hun 478 13 25.0 480 24 ABS00456 Hun 479 13 25.0 480 27 AAI31757 Prc 476 13 25.0 480 28 AAI31757 Prc 477 13 25.0 480 28 AAI31757 Prc 478 13 25.0 480 28 AAI31757 Prc 479 13 25.0 480 28 AAI31757 Prc 470 13 25.0 480 28 AAI31750 Pr	447 13 25.0 418 25 ABX42688 Bovine E8 448 13 25.0 426 25 ABX45974 Bovine E8 449 13 25.0 428 26 ABX44296 Bovine E8 450 13 25.0 428 27 ABL81589 Human ov 451 13 25.0 428 27 ABL81589 Human ov 452 13 25.0 438 27 ABM29043 Drosophit 453 13 25.0 438 27 ABM29043 Drosophit 454 13 25.0 438 27 ABM29043 Drosophit 455 13 25.0 438 27 ABM29043 Drosophit 456 13 25.0 438 27 ABM29040 PERV clo 457 13 25.0 439 21 AB076892 PERV clo 458 13 25.0 444 24 ABL94068 Arabidoph 458 13 25.0 446 22 AAM59892 458 13 25.0 446 22 AAM59892 460 13 25.0 462 22 AAM51540 Human fo 461 13 25.0 462 22 AAK05903 462 13 25.0 462 22 AAK151540 Human br 463 13 25.0 462 22 AAK151540 Probe #6
500 13 25.0 539 24 ABL82719 501 13 25.0 540 21 AAA40272 502 13 25.0 540 21 AAA40292 503 13 25.0 543 22 ABA59936 504 13 25.0 543 22 ABA28363 505 13 25.0 543 22 AAK34085 507 13 25.0 543 22 AAK34085	491 13 25.0 512 22 492 13 25.0 520 21 493 13 25.0 523 21 494 13 25.0 525 25 495 13 25.0 531 25 496 13 25.0 534 18 497 13 25.0 535 24 498 13 25.0 535 24 499 13 25.0 536 22	479 13 25.0 483 22 ABA29032 481 13 25.0 483 22 ABA29032 481 13 25.0 483 22 AAK07543 482 13 25.0 483 22 AAK16215 483 13 25.0 483 22 AAK16415 484 13 25.0 483 22 AAK139126 485 13 25.0 483 22 AAK139126 486 13 25.0 483 22 AAK139126 487 13 25.0 483 23 ABS31092 488 13 25.0 483 23 ABS31092 489 13 25.0 488 23 ABL11379 489 13 25.0 502 21 AAC45003 490 13 25.0 502 21 AAC45003	465 13 25.0 462 24 ABS06294 Human 1 466 13 25.0 465 21 AAA81596 N. meni 467 13 25.0 465 21 AAA81596 N. meni 468 13 25.0 475 21 AAC39705 Zea may 2 ABS2150 Human 3 ABS2150 Huma	447 13 25.0 418 25 ABX42688 Bovine EST 448 13 25.0 426 25 ABX45974 Bovine EST 449 13 25.0 426 25 ABX44596 Bovine EST 449 13 25.0 428 26 ABX41826 Polynucleot 451 13 25.0 428 24 ABL81589 Human ovari 452 13 25.0 438 22 AAX21226 Polynucleot 453 13 25.0 438 22 AAX29043 Probe #6547 455 13 25.0 438 25 ABZ18971 Group III c 455 13 25.0 439 21 AB062599 Pycobacteri 456 13 25.0 439 21 AB062599 Pycobacteri 457 13 25.0 444 24 ABL94068 Arabidopsis 458 13 25.0 446 22 AAX98920 PERV clone 457 13 25.0 446 22 AAX98920 Human focta 460 13 25.0 462 22 AAX05903 Human focta 461 13 25.0 462 22 AAX05903 Human bone 462 13 25.0 462 22 AAX05903 Human bone 463 13 25.0 462 22 AAX137419 Probe #6547
	13 25.0 387 23 AAS65034 DNA encoding no 13 25.0 387 23 AAS78910 DNA encoding no 13 25.0 387 24 ABQ91493 M. capsulatus ç 13 25.0 391 25 ABZ32535 Aspergillus or; 13 25.0 393 18 AAT49174 Partial DNA clo 13 25.0 393 25 ABX40789 Bovine EST asso 13 25.0 398 22 AAF66457 Novel human po: 13 25.0 399 25 ABX54028 Bovine EST asso	13 25.0 357 22 ABA72477 13 25.0 357 22 ABA3842 13 25.0 357 22 ABA3842 13 25.0 357 22 AAK20901 13 25.0 357 22 AAK47053 13 25.0 357 22 AAK67121 13 25.0 357 22 AAF67121 13 25.0 357 23 ABS46814 13 25.0 357 24 ABS21293 13 25.0 357 23 ABS413403 13 25.0 387 23 AAS65034 13 25.0 387 24 ABS910 13 25.0 387 25 ABS46814 13 25.0 387 27 AAS65034 13 25.0 387 28 AAS685034 13 25.0 387 29 AAS685034 13 25.0 391 25 ABS46078 13 25.0 393 25 ABS46078 13 25.0 398 22 AAF66457 13 25.0 399 25 ABS46028	13 25.0 334 24 ABOS5042 Hung 13 25.0 336 24 ABGS6042 Hung 13 25.0 336 24 ABGS6042 Hung 13 25.0 341 24 ABGS6973 Arah 13 25.0 341 24 ABGS6973 Arah 13 25.0 342 11 AAQ06505 13 25.0 342 21 AAGCS715 13 25.0 348 21 AAGCS715 13 25.0 349 25 ABX55362 Hung 13 25.0 349 25 ABX55362 Hung 13 25.0 355 22 AALS31788 Hung 13 25.0 355 22 AALS31788 Hung 13 25.0 357 22 ABAS8242 Prob 13 25.0 357 22 AAK20901 13 25.0 357 22 AAK2090 13 25.0 357 22 AAK2090 13 25.0 357 22 AAK2090 13 25.0 357 24 ABS212493 14 Ung 13 25.0 379 23 AAS74910 13 25.0 387 23 AAS74910 13 25.0 397 24 ABQ91493 13 25.0 397 25 ABX540789 13 25.0 393 25 ABX40789 13 25.0 399 25 ABX54028 BOVJ 13 25.0 399 25 ABX54028 BOVJ 13 25.0 399 25 ABX54028	13 25.0 272 24 ABL73344 CCorn tassel. 13 25.0 275 25 ABX19873 Human GDP-man 25.0 288 25 ABX29873 Human GDP-man 25.0 288 26 ABX46515 Corn tassel. 13 25.0 288 24 ABL72164 Corn tassel. 13 25.0 288 24 ABL72164 Corn tassel. 13 25.0 288 24 ABL72164 Corn tassel. 13 25.0 290 24 ABG54384 Corn tassel. 13 25.0 290 24 ABL73464 Human GDP-man 25.0 300 21 AAA001371 Human ovaria. 13 25.0 300 21 AAA001371 Human ovaria. 13 25.0 300 22 AAA001371 Human ovaria. 13 25.0 312 21 AAC75304 Human ovaria. 13 25.0 312 21 AAC75304 Human ovaria. 13 25.0 312 21 AAC75304 Human ovaria. 13 25.0 313 24 ABG56012 Human ovaria. 13 25.0 314 24 ABG6505 Human ovaria. 13 25.0 317 23 AAV07541 AAC06505 Human ovaria. 13 25.0 342 25 AAX25118 Human ovaria. 13 25.0 342 27 AAA008505 Human ovaria. 13 25.0 348 21 AAC25715 Human ovaria. 13 25.0 357 22 AAAX35188 Human ovaria. 13 25.0 357 22 AAAX3242 Human ovaria. 13 25.0 357 22 AAAX3242 Human ovaria. 13 25.0 357 22 AAAX32170 Human ovaria. 13 25.0 357 23 AAAX32170 Human ovaria. 13 25.0 357 24 AAAX32170 Human ovaria. 13 25.0 357 25 AAAX32170 Human ovaria. 13 25.0 357 25 AAAX32170 Human ovaria. 13 25.0 357 25 AAAX32170 Human ovaria. 14 AAAX32170 Human ovaria. 15 25.0 357 25 AAAX32170 Human ovaria. 16 25.0 357 25 AAAX32170 Human ovaria. 17 25.0 357 25 AAAX32170 Human ovaria. 18 25.0 357 25 A

n	ი ი		იი ი	00 000			000 0 0	ი ი ი
586 586 588 588 590 592	579 580 581 582 583	573 574 575 576 577	566 567 568 569 570 571	560 561 563	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	533 534 537 538 539 540	5 5 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	13 13 13 13 13 13 13 13 13 13 13 13 13 1	1111111	13 13 13 13 13 13 13 13 13 13 13 13 13 1	111111111111111111111111111111111111111	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			225.00000000000000000000000000000000000
903 903 903 903 911 911	885 885 896 901	868 868 879 879 879	812 828 828 833 846 861	788 789 792 795 798	738 738 764 769 781 783 783	687 699 701 717 725 735	638 640 642 651 652 673	599 599 601 601 621 623 633
22235421	222222	222222	21 22 24 22 21	24 24 22 22 22 18	32222222222	222222222222222222222222222222222222222	221 24 24 24	224
AAA30776 AAH34910 ABK90236 ABZ42843 ABZ424847 ABA47406 ABA65294 ABA32395	AAC43112 AAS76673 AAA57876 AAAS5149 ABZ11552 AAA30759	ABV22742 ABV28570 AAF64186 ABL19399 ABZ73540 ABZ67145	AAC76634 AAK91605 AAK93176 ABQ89452 ABZ12457 AAF71943 AAC41744	AAAO5420 ABL34966 ABL34966 AAK91717 AAK93730 AAC50856 AAT49169	AAH06816 AAH67258 AAC99041 AAZ17031 ABL11139 ABC77261 ABC77261 ABC52270 AAK91786	AAC37728 ABT09927 AAH06669 ABK73909 AAF11898 ABL28303 AAC37728 AAC37728 ABC3758	ABX65669 AAH42840 ABL29545 ABL24859 AAF12695 AAV31269 AAV31299 ABQ65850 ABC82842	ABQ14800 ABQ14801 AAF08946 AAK58899 AAD08504 AAAC77868 ABX65542 AAD08528 ABX678000 ABQ47959 ABQ47959 AAF09210 AAH07612
DNA en Human Human Human Human Human Human Human		Human Human Human Drosop Secret Secret	uman uman uman uman rabio	Human Human Human Human Human Arabid Partia	Human cDNA clo C glutamicum c Human pancreat Human gene exp Drosophila mel Human ORFX ORF Aspergillus or Human cDNA 5'-	Arabidopsis Human breas Human cDNA Bacillus li Aspergillus Drosophila Drosophila Arabidopsis Human cDNA Arabidopsis	Helicobacter pylor Nucleotide sequenc Drosophila melanog Drosophila melanog Drosophila melanog Aspergillus oryzae Human colon cancer E. coli J96 pathog Arabidopsis thalia Human secreted pro	Oligonuc Oligonuc Oligonuc Fusarium Human in Human se Human se Human se Helicoba Human se Bacillus Oligonuc Oligonuc Oligonuc Oligonuc Oligonuc Oligonuc Fusarium Fusarium Human cl
coding colon cDNA er G prote prostat breast foetal	_ o,≼ g o g .	n prosin prosin secri		O-me CDNA CDNA CDNA CDNA	cDNA cl tamicum pancrea gene ex phila me ORFX OR gillus o cDNA 5'	brea cDNA cDNA lus l lus l gillu ghila dopsi cDNA dopsi	obactotide phila phila gillu colo colo li J9 dopsi	gonucleot gonucleot arium ven an immune an secret an cancer icobacter an secret jonucleot gonucleot gonucleot arium ven an cDNA c
+ P O O E E E O O T	sis thaliding nove	ر م م ب ⊆ ب ب		thyltrantsolate isolate 5'-end clone s thalia	A clone (cum codin creatic c e express a melanog X ORF2816 X ORF2816 A 5'-end	dopsis thalia breast cance cDNA clone (lus lichenifo gillus oryzae ghila melanog dopsis thalia cDNA clone (dopsis thalia	er py sequ mela mela s ory n can 6 pat 5 tha eted	venenatum
numan ncer odin n-co exp iver	thalia novel glossy gluta cleoti	ce exp	rhalia	ran ran ate nd nd e r	one (codin codin coress anog 2816 cyzae end	lia nce e (ifo ifo zae zae nog lia lia	lor enc nog nog zae zae cer hog hog pro	fo i g
6663 6663 6664	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 647 648 649 651		C C C G3 S C C G3 S G G G G G G G G G G G G G G G G G		c 615 616 617 618 c 619 c 620 c 621 c 623	606 607 608 609 610 611 612 613	c c 599 595 600 2 1
		16666666666666666666666666666666666666	, , , , , , , , , , , , , , , , , , ,	1111111		122222222	13 13 13 13 13 13 13 13 13 13 13 13 13 1	
	1 51 51 51 51 51 51	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	• • • • • • • • • • • • • • • • • • • •	<i> </i>	· • • • • • • • • • • • • • • • • • • •	22225.000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	22222222222222222222222222222222222222
108	,		.					
, , , , , , , , , , , , , ,	000000000000000000000000000000000000000	1086 1086 1086 1086	1046	1022 1024 1024 1028 1028 1035 1037	989 989 989 994 1002 1014 1016	966 966 967 972 974 985 985 989	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	911 911 911 911 911 911 921 933 933
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		000000000000000000000000000000000000000	0065	022 024 024 2 028 2 035 2 037 2 041 2	989 2 989 2 994 2 0016 2 016 2			
22 AAI 22 AAI 22 AAI 22 AAI 22 AAI 23 ABS	086 22 ABJ	00/9 22 AAH 0085 22 AAH 0086 22 ABH 0086 22 ABH 0086 22 ABH 0086 22 ABH	046 21 AAC 047 23 ABI 047 23 ABI 065 24 ABC 065 24 ABC 067 24 ABI 071 22 AAI	022 20 AA) 024 24 ABI 024 25 AB2 028 22 AAI 028 23 AAS 035 23 AAS 037 24 ABI 041 21 AAC	989 23 ABI 989 24 ABI 989 24 ABI 998 23 ABI 002 21 ABI 014 23 ABI 016 21 AAC	23 ABS 24 ABS 22 AAJ 24 ABS 21 AAG 21 AAG 21 AAG 21 AAG 21 AAA	24 AB3 22 AB4 22 AB4 22 AA4 22 AA1 22 AA1 22 AA1 22 AA1	911 22 AAK13708 911 22 AAK29449 911 22 AAI20259 911 22 AAI45461 911 22 AAI05963 911 23 ABS3963 911 24 ABS13538 919 21 AAC54383 919 22 AAS93485 924 23 AAS93485 924 23 AAS93607 933 22 ABA089607 933 22 ABA089607 934 23 AAC51026
22 AAI1959 22 AAI20167 22 AAI20167 22 AAI44846 22 AAI65367 22 AAI65369 22 AAI65369 23 ABS38427	086 22 ABA31800 086 22 ABA32297 086 22 ABA32297 086 22 AAK13113 086 22 AAK13613	079 22 AAH14873 080 22 AAF31683 085 22 AAH72753 086 22 ABA46796 086 22 ABA467311 086 22 ABA4676	046 21 AAC35608 047 23 ABL24601 047 24 ABQ15278 065 24 ABQ15279 067 24 ABK65622 071 25 AAF60838	022 20 AAX28354 024 24 ABK40075 024 25 ABZ83378 028 25 AAF68001 028 22 AAF68012 035 23 AAS51422 037 24 ABA05419 041 21 AAC49125	989 23 ABK43597 989 24 ABK40264 989 24 ABK40264 994 23 ABK43895 904 23 ABK75255 014 23 ABK77655 016 21 AAC37813 020 14 AAC37813	23 ABS38535 24 ABS31031 22 AAA33455 24 ABK55371 21 AAC46464 21 AAC38710 21 AAC398166 21 AAA37107 22 AAF54419	24 ABZ14724 22 ABA46903 22 ABA64784 22 ABA31902 22 AAK13216 22 AAK38947 22 AAK1953 22 AA119757 22 AA119753	22 AAK13708 22 AAK13708 22 AAK20259 22 AA120259 22 AA105963 23 ABS39040 24 ABS13538 21 AAC54383 23 AAS80363 24 ABN98607 25 ABN98607 26 ABN98607 27 ABA08963
22 AAI1959 22 AAI20167 22 AAI20167 22 AAI44846 22 AAI65367 22 AAI65369 22 AAI65369 23 ABS38427	086 22 ABJ	079 22 AAH14873 080 22 AAF31683 085 22 AAH72753 086 22 ABA46796 086 22 ABA467311 086 22 ABA4676	046 21 AAC35608 Arabi 047 23 ABL24601 Droso 055 24 ABQ15279 Oligo 057 24 ABK35622 Rat s 070 25 AAF60838 Pseud	022 20 AAX28354 024 24 ABK40075 024 25 ABZ83378 028 25 AAF68001 028 22 AAF68012 035 23 AAS51422 037 24 ABA05419 041 21 AAC49125	989 23 ABK43597 989 24 ABK40264 989 24 ABK40264 994 23 ABK43895 904 23 ABK75255 014 23 ABK77655 016 21 AAC37813 020 14 AAC37813	23 ABS38535 Huma: 24 ABS13031 Huma: 22 AAA131455 Huma: 24 ABK65371 Arab 21 AAC46464 Arab 21 AAC38710 Arab 21 AAC38710 Huma: 21 AAA37107 Huma: 22 AAF54419 DNA -	24 ABZ14724 Arabi 22 ABA46903 Human 22 ABA64784 Human 22 ABA31902 Probe 22 AAK13216 Human 22 AAK38947 Human 22 AAK19757 Probe 22 AAI19757 Probe 22 AAI144953 Probe	22 AAK13708 Human 22 AAK139449 Human 22 AAI20259 Probe 22 AAI105963 Probe 23 ABS39040 Human 24 ABS13530 Human 21 AAC54383 DNA eg 23 AAS80363 DNA eg 24 ABN98607 Arabin 25 AAS90663 Human 26 ABN98607 Human 27 ABA089663 Arabin 28 AAC51026 Arabin
22 AA11959 Probe 22 AA120167 Probe 22 AA120167 Probe 22 AA14846 Probe 22 AA165367 Probe 22 AA165369 Probe 22 AA165369 Probe 23 AA165872 Probe 24 AA165872 Probe 25 AA165872 Probe	086 22 ABA31800 Probe 086 22 ABA32297 Probe 086 22 ABA323113 Human 1 086 22 AAK13613 Human 1 086 22 AAK13613 Human 1 086 22 AAK3613 Human 1	0/9 22 AAH14873 Human cE 080 22 AAF31683 Human al 085 22 AAH72753 Human ce 086 22 ABA46796 Human bz 086 22 ABA47311 Human bz 086 22 ABA47311 Human bz 086 22 ABA47311 Human bz	046 21 AAC35608 Arabidops: 047 23 ABL24601 Drosophil 048 ABQ15278 Oligonucli 059 24 ABQ15279 Oligonucli 057 24 ABK63622 Rat sequen	022 20 AAX28354 024 24 ABK40075 024 25 ABZ83378 028 25 AAF68001 028 22 AAF68012 035 23 AAS51422 037 24 ABA05419 041 21 AAC49125	989 23 ABK43597	23 ABS38535 Human live 24 ABS13031 Human genoi 22 AAH33455 Human coloi 24 ABK65371 Arabidopsii 21 AAC46464 Arabidopsii 21 AAC38710 Arabidopsii 21 AAA37107 Human pROl1 21 AAA37107 Human pROl1 22 AAF54419 DNA encodii	24 ABZ14724 Arabidd 22 ABA46903 Human 1 22 ABA64784 Human 1 22 ABA31902 Probe 1 22 AAK3216 Human 1 22 AAK3947 Human 1 22 AAK38947 Probe 1 22 AAK19757 Probe 1 22 AAA119757 Probe 1 22 AAA11975 Probe 1 23 AAA11975 Probe 1	22 AAK13708 Human b 22 AAK139449 Human b 22 AA120259 Probe # 22 AA120259 Probe # 22 AA105963 Probe # 23 AB39040 Human g 24 ABS13538 AAS91485 DNA enc 23 AAS80363 DNA enc 23 AAS80363 DNA enc 23 AAS80363 ARBDIdo 22 ABA089607 Arabido 23 AAS91026 Arabido 24 ABN98607 Arabido
22 AAI19650 Probe 22 AAI120167 Probe 22 AAI14846 Probe 22 AAI65867 Probe 22 AAI65369 Probe 22 AAI65872 Probe 23 ABS38427 Human	1066 22 ABA31800 Probe #10266 1086 22 ABA31800 Probe #10763 1086 22 ABA32297 Probe #10763 1086 22 AAK13613 Human brain 6 1086 22 AAK13613 Human brain 6 1086 22 AAK36842 Human bone ma	0/9 22 AAA114873 Human CDV 080 22 AAAF31683 Human alp 085 22 AAAF72753 Human cer 086 22 ABA46796 Human bre 086 22 ABA47311 Human bre 086 22 ABA4676 Human bre	046 21 AAC35608 Arabidopsis t 047 23 ABL24601 Drosophila me 047 24 ABQ15278 Oligonucleoti 055 24 ABQ15279 Oligonucleoti 057 24 ABK3362 Rat sequence 057 24 ABK3622 Rat sequence 057 24 ABF63623 Pseudomonas t	022 20 AAX28354 Kringlel co 024 24 ABK40275 CDNA encologic 024 25 ABZ83378 Toxicologic 024 25 AAF68001 Corynebacte 028 22 AAF68001 Peeudomonas 037 24 ABA05419 Human O-met 037 24 ABA05419 ABA05419 Arabidossis	989 23 ABK43597	23 ABS38535 Human live. 24 ABS13031 Human geno: 22 AAH33455 Human coloi 24 ABK65371 Arabidopsi: 21 AAC46464 Arabidopsi: 21 AAC38710 Arabidopsi: 21 AAC398166 Human sign: 21 AAA37107 Human PRO1: 22 AAF54419 DNA encodi:	24 ABZ14724 Arabi 22 ABA46903 Human 22 ABA64784 Human 22 ABA31902 Probe 22 AAK13216 Human 22 AAK38947 Human 22 AAK19757 Probe 22 AAI19757 Probe 22 AAI144953 Probe	22 AAK13708 Human brai 22 AAK13708 Human bone 22 AAI10259 Probe #101 22 AAI10259 Probe #101 22 AAI15963 Probe #595 23 ABS39040 Human live 24 ABS13538 Arabidopsi 25 AAS93485 DNA encodi 27 AAS93485 DNA encodi 28 AAS90363 Arabidopsi

		C 712 C 713 C 714 715 716 717 717 C 719 C 721		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C C C C C C C C C C C C C C C C C C C
55555555555555555555555555555555555555		5555555555			
		•••••		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2 X X X X X X X X X X X X X X X X X X X
1401 1401 1408 1412 1422 1448 1448 1448 1452		1311 1311 1321 1320 1320 1326 1328 1328 1339 1339	1298 1300 1302 1304 1304 1311 1311 1311 1311 1311 1311	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1086 1086 1093 1093 1100 1100 1100 1100 1110 1111 1111
201114404	205555	0000000	4474555555555	7 8 4 4 0 0 4 4 4 C	0 C 1 C C C C C C C C C C C C C C C C C
AAS3333 AAS3333 AAC50427 AAC40335 AAC59228 ABC014796 ABC14797 AAH67004 AAD30175	ABV24243 AAA571440 AAA647933 ABX08513 ABX08513 ABS55931 ABX08450 AAAX34246	NEXO8438 NEXO8441 NEXO8443 AAP61061 AAV30803 AAV30803 AAV59842 AAC50839 AAF61078	ACC37673 ABC54468 ABC54468 ACC47791 ABCX08416 ABX08418 ABX08431 ABX08433 ABX08433 ABX08433 ABX08433	ANGE 500 6	ABS12923 ABS13441 AAV57380 ABC61039 ABC72955 ABC90219 AAC78083 AAC39321 AAC39321 AAC42004 ABC42005 ABC902162 ABC903167 AAC53167 AAC53168 AAI87018 AAS53168 AAI87018 AAS62642 AAI84585 AAS68985
DNA e DNA e Arabi Arabi Human Oligo C gluu Human	<	DNA DNA DNA DNA DNA DNA Huma Huma Huma Huma Brain Brea	Arabidog Human ov Mouse St Arabidog DNA encc	H. p. Arab Arab Arab Arab B4 b. B4 b. Arab B4 B4 b. Arab Arab Arab Arab Arab Arab Arab Arab	Human Human Human Maize Human Bacil! M. cal Human Arabi Oligo Oligo M. cal Arabi Neiss Neiss Neiss Neiss
ding nove ding nove sis thali sis thali creted pr leotide f leotide f leotor codi p-glucuro	oding nove sis thali ding alph ding alph ding alph ding alph ding alph	oding a oding a oding a oding a oding a creted a KT24 la KT24 la KT24 la KT24 la KT24 la KT24 la KT24	verse control of the	Dan Ger Hand Ber Hand	an genome-deriv ze female-prefe an pRO1558 prot illus lichenifo illus lichenifo capsulatus gene an cancer assoc an cancer assoc gonucleotide fo gonucleotide fo capsulatus gene bidopsis thalia sseria meningit sseria meningit an polynucleoti ha sequence #429 coli growth and
C C 800 4 3 5 8 8 8 9 9 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1		C 785 C 786 C 788 C 788 C 789 791 792		758 0 758 0 760 0 761 0 762 0 763 0 764 0 767 0 770 0 770	C 7441 C 7441 C 7441 C 7441 C 7444 C 7548 C 7551 C 7551 C 7554
111111111111111111111111111111111111111					
	311111111111	166666666			
N N N N N N N N N N N N N N N N N N N	20000000000	2222222			13 25.0 13 25.0 13 25.0 13 25.0 13 25.0 13 25.0 13 25.0 13 25.0 13 25.0 13 25.0
22222222 55555555555555555555555555555		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	222222222222222222222222222222222222222
25.0 1857 25.0 1860 25.0 1870 25.0 1871 25.0 1878 25.0 1878 25.0 1913 25.0 1913 25.0 1913 25.0 1926	3 25.0 1784 3 25.0 1787 3 25.0 1787 3 25.0 1802 3 25.0 1803 3 25.0 1803 3 25.0 1803 3 25.0 1803	25.0 1771 25.0 1771 25.0 1771 25.0 1771 25.0 1773 25.0 1784 25.0 1784 25.0 1784 25.0 1784	3 25.0 1693 3 25.0 1696 3 25.0 1793 3 25.0 1713 3 25.0 1721 3 25.0 1721 3 25.0 1726 3 25.0 1726 3 25.0 1726 3 25.0 1726 3 25.0 1771	3 25.0 1552 3 25.0 1552 3 25.0 1552 3 25.0 1564 3 25.0 1575 3 25.0 1575 3 25.0 1618 3 25.0 1611 3 25.0 1661 3 25.0 1661	
25.0 1857 18 25.0 1860 23 25.0 1860 21 25.0 1871 22 25.0 1878 25 25.0 1878 25 25.0 1913 22 25.0 1913 25 25.0 1913 25 25.0 1926 15	3 25.0 1784 24 3 25.0 1787 20 3 25.0 1787 20 3 25.0 1802 21 3 25.0 1802 24 3 25.0 1803 21 3 25.0 1812 20	25.0 1771 19 25.0 1771 19 25.0 1771 20 25.0 1771 20 25.0 1773 24 25.0 1784 18 25.0 1784 22 25.0 1784 22 25.0 1784 22 25.0 1784 22	25.0 1693 23 3 25.0 1696 22 3 25.0 1796 24 3 25.0 1713 23 3 25.0 1721 22 3 25.0 1721 22 3 25.0 1721 22 3 25.0 1726 22 3 25.0 1726 22 3 25.0 1726 22 3 25.0 1726 23 3 25.0 1771 18	3 25.0 1552 3 25.0 1552 3 25.0 1552 3 25.0 1564 3 25.0 1575 3 25.0 1575 3 25.0 1618 3 25.0 1611 3 25.0 1661 3 25.0 1661	3 25.0 1458 20 3 25.0 1467 24 3 25.0 1509 20 3 25.0 1509 20 3 25.0 1539 22 3 25.0 1544 22 3 25.0 1547 20 3 25.0 1547 20 3 25.0 1547 20 3 25.0 1547 21 3 25.0 1547 21 3 25.0 1547 21 3 25.0 1547 21 3 25.0 1547 22 3 25.0 1547 22 3 25.0 1547 25 3 25.0 1547 25
25.0 1857 18 25.0 1860 23 25.0 1860 21 25.0 1871 22 25.0 1878 25 25.0 1878 25 25.0 1913 22 25.0 1913 25 25.0 1913 25 25.0 1926 15	3 25.0 1784 24 3 25.0 1787 20 3 25.0 1787 20 3 25.0 1802 21 3 25.0 1802 24 3 25.0 1803 21 3 25.0 1812 20	25.0 1771 19 25.0 1771 19 25.0 1771 20 25.0 1771 20 25.0 1773 24 25.0 1784 18 25.0 1784 22 25.0 1784 22 25.0 1784 22 25.0 1784 22	25.0 1693 23 3 25.0 1696 22 3 25.0 1796 24 3 25.0 1713 23 3 25.0 1721 22 3 25.0 1721 22 3 25.0 1721 22 3 25.0 1726 22 3 25.0 1726 22 3 25.0 1726 22 3 25.0 1726 23 3 25.0 1771 18	3 25.0 1552 24 3 25.0 1552 22 3 25.0 1552 25 3 25.0 1564 24 3 25.0 1570 24 3 25.0 1575 19 3 25.0 1575 19 3 25.0 1608 25 3 25.0 1608 25 3 25.0 1661 25 3 25.0 1664 23 3 25.0 1664 23 3 25.0 1664 23 3 25.0 1664 23	3 25.0 1458 20 3 25.0 1467 24 3 25.0 1509 20 3 25.0 1509 20 3 25.0 1539 22 3 25.0 1544 22 3 25.0 1547 20 3 25.0 1547 20 3 25.0 1547 20 3 25.0 1547 21 3 25.0 1547 21 3 25.0 1547 21 3 25.0 1547 21 3 25.0 1547 22 3 25.0 1547 22 3 25.0 1547 25 3 25.0 1547 25
25.0 1857 18 25.0 1860 23 25.0 1860 21 25.0 1871 22 25.0 1878 25 25.0 1878 25 25.0 1913 22 25.0 1913 25 25.0 1913 25 25.0 1926 15	3 25.0 1704 22 AAAL/341 3 25.0 1784 24 AAD/34146	25.0 1771 19 AAV64459 M. tuber 25.0 1771 19 AAV44351 Mycobact 25.0 1771 20 AAZ19261 M. tuber 25.0 1771 20 AAZ19049 M. tuber 25.0 1773 24 ABK54135 CDNA enro 25.0 1784 18 AAV04315 Rape pro 25.0 1784 18 AAV186125 Rape pro 25.0 1784 22 AAD15437 Oilseed 25.0 1784 22 AAD75681 Oilseed	3 25.0 1693 23 ABV23242 3 25.0 1696 22 AAF76269 3 25.0 1696 22 AAF76269 3 25.0 1704 22 AAF68000 3 25.0 1713 23 ABL18459 3 25.0 1721 22 AABA08038 3 25.0 1721 22 AAAD66699 3 25.0 1721 22 AAAD66699 3 25.0 1726 22 AAAD66698 3 25.0 1726 22 AAAD66698 3 25.0 1726 23 AAAD66698 3 25.0 1726 23 AAAD6698 3 25.0 1726 23 AAAD6698 3 25.0 1726 23 AAAD6698 3 25.0 1726 18 AAT91473 3 25.0 1726 18 AAT91473	3 25.0 1552 24 3 25.0 1552 22 3 25.0 1552 25 3 25.0 1564 24 3 25.0 1570 24 3 25.0 1575 19 3 25.0 1575 19 3 25.0 1608 25 3 25.0 1608 25 3 25.0 1661 25 3 25.0 1664 23 3 25.0 1664 23 3 25.0 1664 23 3 25.0 1664 23	3 25.0 1458 20 AAX32293 3 25.0 1467 24 ABK87052 3 25.0 1491 16 AAQ86278 3 25.0 1509 20 AAX29858 3 25.0 1509 23 ABL24571 3 25.0 1530 22 AAH65219 3 25.0 1530 22 AAS05176 3 25.0 1540 22 AAS05176 3 25.0 1547 22 AAX29308 3 25.0 1547 20 AAX37263 3 25.0 1547 20 AAX37263 3 25.0 1547 20 AAX97958 3 25.0 1547 21 AAAC78575 3 25.0 1547 21 AAAC95929 3 25.0 1547 22 AAS21452 3 25.0 1547 25 ACA03811 3 25.0 1547 25 ABX92652

C 8881 C 8883		C 875	C 873			C 867			863	861 862		0 8 8 9 8 9		C 856		853	-		C 848	846 847	C 845	C 843	841 842	840	C 838		C 835	894		C 830					C 823		C 821		818	C 816	815	C 813
	1 11 11	13	13 1	13	. r . r	13	13	13	13 (. L . U	13	13	13	13	13	13	13	13	1 3	133	13	13	113	13	13	13	13	13	13	יין ניו ניי	13	13 1	13	13	13	13	13 6	113	13	. <u></u>	13	13
25.0	ייטייטיי			1010	л U			лv		л (л		25. 0	.5	25.0	יטי	25.0	, v	25.0		. v		25.0	์ .		n us	5.	• 5	25.0	S	л .			٠.	٠.	ຫ້	יטי	<u>ა</u>	າ ທ	5.	າ ທ	. ·	25.0
2490 2496 2496 2503 2507 2517	2459	2450 2450	2437	2373	2373	2332 2353	2329	2324	2306	2280	2280	2257 2270	2244	2233	2222	2220	2210	2210	2208	2192	2187	2150	2117	2114	2101	2093	2085	2081	2081	2076	2074	2072	2048	2048	2048	2047	2039	2001	2000	1965	1961	1959
21 23 23 25	19	222	22	22:	21	2 2 4	22	22	22	23	22	23	23	25	22	226	25	22	14	23	24	2 2 2	19 24	22	3 22	22	22	223	22)))	21	20	24	18	17	22	19	2 2	15	12	23	24
AAC77446 ABN79878 ABN79878 AAS73028 ABL08781 ABT19087	AAV35490 AAV44010	AAK94460 AAH88796 ABL07283	ABZ82469 AAH14531	ABL90420	AAF18310	AAK94700 ABL90005	AAD03460	AAK94137	AAH15498	ABL05527	AAF61033	ABL24210 AAC75892	AAS51440	AAS11755 ABX11570	AAI 60525	AAH16162	ABZ24241	AAL40121 AAF32614	ABS51382	AAS71438 AAD12607	ABL65382	ABL12905	AAV59658 ABS73645	AAD13366	AAD00680	AAD13401	ABL17165	AAS85300 AAS29824	AAS29825	AAD08430 AAS29823	AAZ29114	AAV99925	ABA92490	AAT95836	AAQ67534	AAD17480	AAV20962	ABN93165	AAQ74367	AAQ11815	AAS82820	ART04546 ABK72729
Human ORFX ORF3001 Human ORFX ORF3001 Fungal ZBC gene se DNA encoding movel Drosophila melanog Aspergillus fumiga	e calp	full lucos	Human secreted pro Human cDNA sequenc	n polynucleot	cancer assoc	Human full-length	Human tissue-plasm	full-	Human cDNA sequenc	Drosophila melanog	P. putida KT2440-a	Drosophila melanog		ncod bood	Human polynucleoti	Drosophila melanog Human cDNA seguenc	Human SLC22A gene	Isoprenoid related Human organic anio	cDNA encoding larv	DNA encoding novel	Human transporter Lung cancer relate	ohila mel	Human secreted pro	C albicans apoptos Human secreted pro	Human Hydrolase pr	Human secreted pro	phila me		Human cytoskeletal	Human secreted pro	Wheat zeta-caroten	DYT1 torsion dysto	\sim	DNA for carboxypep	Carboxypeptidase G	Human transporter	Listeria monocytog Human chromosome i	Staphylococcus epi	Bovine beta3 adren	membrane	DNA encoding novel	lichenif
0 953 0 953 9 955 9 956		C 947	C 945	943	C 942			C 937				c 931		c 928		c 925		922	921	919	C 917		C 914	c 912 913		c 909	908			c 903				C 898		895		c 892	890 891	C 889		C 886
133333	ដដដ	13	13	13 13	13	13	13	13	1 1	13	13 4	13	ដ	13	13 1	13	13	113	13 13	ដដ	13	בן נו	13	ដដ	13	13	13	13	13	: 13	13 1	, 1 , 3	13	13 1	13	13	13	13	13	13	13 5	13
25.00																																										
3150 3157 3157 3173 3175 3179	143	5 5 5	33	131			2 2	5 5	2 2	2 :	9 9	20	S 5	2 9	8 3	9.8	80 0	9 69	8 8	2 2 2	2.2	2.	12	7 7	7:	2 6	500	ان ت	დ დ	9	6 9	ď	6	0,0	9	5 0	ັດ	ŭι	ν ν	5	'nν	S
22343	24 21 23	21	25 22	23	16	22	23	22	24	24	24	23	23	18	22	ა გა ა ა	24	13	13	25.5	2 2	23	23	2 2 2 2	23	25	22	23	2 4	23	21	25	22	23	20	20))) 5	11	23	22	24	23
ABL11 AAV20 AAS73 ABL59 AAS94 AAK94	ABN9 AAC4 ABL2	AAA62 ABL15	ABT17	ABL24 AAS71	AAQBB	ABL24	ABL199	AAI58	ABV781	ABX099	ABZ356	ABL27	ABL03	AAT68	AAH73	ABL11	ABZ781	AAQ244	ABT056 AAQ242	ABZ8143	ABS704	ABL111	ABL29	ABL16	ABL24	ABT18	AAH33	ABL12	AAC76	ABL12	AAD00:	ABT20	AAH14	AAQ06	AAX28	AAV99	ABT20	AAQ05	ABL26	AAF58	ABZ78	ABL12

Human protease and Drosophila melanog A. niger kex cDNA. Human GTP-binding Drosophila melanog Serum somatotropin Aspergillus fumiga Human cDNA sequenc Wringlel coding se Gene conferring te DNA encoding novel Human cDNA sequenc Aspergillus fumiga Human cDNA sequenc Wheat raffinose sy Drosophila melanog Drosophila melanog Human cDNA sequenc Wheat colon cancer Human cDNA sequenc Wheat CONA #277 di Human cDNA sequenc CDNA sequenc Wheat CONA #277 di Human cDNA sequenc Wheat CONA sequenc Wheat CONA sequenc CDNA sequenc Drosophila melanog Drosophila melanog Drosophila melanog Drosophila melanog Drosophila melanog Human bone remodel Drosophila melanog Human polynucleoti Drosophila melanog Drosoph

```
RESULT 1
AAZ52247/c
ID AAZ52247;
XX
AAZ52247;
XX

DT 18-JUL-2000 (first entry)
XX

Maize glycine-rich protein 3 pa
XX

Maize; glycine-rich protein 3;
XW

root specific gene expression;
XW

root specific gene expression;
XW

pathogen resistance; pest; herb
XX

OS
Zea mays.

XX

Key
FT promoter
FT promoter
FT promoter
FT CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                        COLORDO COLORD
                                                                                                                                                                         Maize; glycine-rich protein 3; GRP3; regulatory element; zmGRP3; root specific gene expression; root abundant gene; monocotyledon pathogen resistance; pest; herbicide; growth rate; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                /rtag= c
/product= "GRP3"
                                                                                                                                                                                                                                                                                                                                                                                                                                        3440
3440
3443
3443
3446
3467
3467
3470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3118
32230
32230
322660
322660
33208
33208
33200
33200
33201
33201
33201
33201
33201
33201
33201
33201
    "Glycine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                         ABL29536
ABV21315
ABV22159
ABV27134
ABV27998
ABL12680
ABZ11772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABI99253
AAH54777
ABL29540
AAZ51259
ABL11137
ABL19010
AAH54563
ABL90281
ABL90781
ABL90781
                                                                                                                                                                                                                                                                                                                                                                                                                                      ABV21868
AAA97456
AAH54124
ABK83884
ABT17648
AAD05133
ABL23328
ABL23328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABL21729
AAK52083
AAX38297
ABL07654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAF59301
ABA92733
ABT19514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABL16043
AAK52285
                                                                                                                                                                                                                                   partial
                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAI59883
ABZ78220
ABL05120
                                                                                                                                                                                                                                                                                                                                                                                               ALIGNMENTS
   protein
                                                                                                                                                                                                                                   genomic clone
                                                                                                                                                                            monocotyledon;
ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human prostate exp
Drosophila melanog
Human polynucleoti
Aspergillus niger
Aspergillus niger
Aspergillus fumiga
                                                                                                                                                                                                                                                                                                                                                                                                                                     Aspergillus fumiga
Human secreted pro
Drosophila melanog
Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanog
S. epidermidis gen
Human polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanog
Human RNA-associat
Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanog
Human polynucleoti
Herpes simplex vir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S. epidermidis gen
Human cDNA differe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human prostate exp
Human RalGDS (hRal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A. niger kex gene.
Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human prostate exp
Human prostate exp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanog
Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human polynucleoti
S. rochei strain E

 S. epidermidis gen

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melano<u>c</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA encoding nove
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonas aerugi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ischaemic co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               exp
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 2
AAD50522/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence is a partial genomic clone zmGRP3 encoding maize glycine-rich protein 3 (GRP3). This sequence comprises 5' and 3' regulatory elements useful for cloning and expressing root specific or root abundant genes in plants, especially monocots which provide high expression efficiency and high tissue specificity. Root preferred gene expression provides several advantages to plants e.g. resistance to pathogens, pests, herbicides and adverse weather conditions, modification of growth rate and alteration of root tissue function. This sequence also provides a means of isolating related regulatory sequences of other plant species which confer root specificity to genes of interest operably linked to them.
                                                                                                                 CDS
                                                                                                                                                                                    Mycobacterial sulphation pathway; immune response; infection; vgene therapy; glycosyl sulfotransferase; enzyme; AST4 protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic acid sequence is used for cloning specific or root abundant gene in a plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_signal
 19-APR-2002; 2002WO-US12374
                            31-OCT-2002.
                                                                                                                                                                                                                                                                                                                    AAD50522 standard; DNA; 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3416 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-271382/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polyA_signal
                                                                                                                                                          Mycobacterium
                                                                                                                                                                                                                                Mycobacterium
                                                                                                                                                                                                                                                            24-MAR-2003
                                                                                                                                                                                                                                                                                         AAD50522;
                                                         WO200286067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (AGRI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200015662-A1
                                                                                                                                                                                                                                                                                                                                                                                            2429 CGTCGCTGCCGGCCTCGCC 2411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4; Page 55-56; 60pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                            30 CGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                  l Similarity 100
19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGRIC TECHNOLOGY & GENETICS GMBH
                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                             avium AST4 (mav_144) glycosyl sulfotransferase
                                                                                                                                                          avium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98EP-0117251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99WO-EP06692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2561..3416
/*tag=
/label= 3'_regulatory_element
2692..2696
/*tag= e
                                                                                                                            Location/Qualifiers
                                                                                   /product= "AST4 protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          755 A; 841 C; 950 G;
                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                       ₽P
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         870 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21;
0.62;
                                                                                                                                                                                                   response; infection; vaccine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone zmGRP3 encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           expressing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3416;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
```

Gaps

0

DNA.

gene; ds

ø root

. .

*88888888888

```
RESULT 3
ABL19972/c
ID ABL199
XX ABL199
XX ABL199
XX Drosop
XX Dro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 200
P-PSDB;
    Claim 1;
                                                                     New isolated nucleic a genes from Drosophila
                                                                                                                                                                                           Venter
                                                                                                                                                                                                                                                                                  23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster genomic polynucleotide SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to mycobacterial sulphation pathway enzymes and polynucleotides encoding such proteins. Sequences of the invention are useful in in vitro cell-free assay for identifying agents that reduce the activity of the proteins. They are useful for increasing an immune response to pathogenic mycobacterium in a host. They are also useful for treating mycobacterial infection in mammals. Sulphation pathway proteins are useful for reducing the viability and virulence of a mycobacterium. They are used as vaccines and in gene therapy. The present sequence is Mycobacterium avium AST4 (mav_144) glycosyl sulfotransferase DNA.
                                                                                                                                                                                                                                                                                                                                                       23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                        27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pharmaceutical; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABL19972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABL19972 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel mycobacterial sulfation pathway polypeptide useful in in vitro cell-free assay for identifying agent that reduces the activity of the polypeptide -
                                                                                                                                                                                                                                        (PE:E)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1392 BP; 215 A; 485 C; 481 G; 211 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-APR-2001; 2001US-285394P.
26-OCT-2001; 2001US-345953P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 114-116; 141pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bertozzi C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (REGC ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2003-093116/08.
DB; AAE32776.
                                                                                                                                            2001-656860/75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29
                                                                                                                                                                                         JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                        PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
    SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGTCGCTGCCGGCCTC 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    regregerecesecere 274
                                                                                                                                                                                                                                        CORP NY.
                                                                                                                                                                                         Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      developmental biology; cell signalling;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Williams
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CALIFORNIA
    Z
    11389;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA;
                                                                       acid
a and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ds.
                                                                                                                                                                                         Ŀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2684
                                                                                                                                                                                         PWD,
                                                                  detection reagent for detecting for elucidating cell signalling
21pp +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mougous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                      Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ç
                                                                                                                                                                                         EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ID NO 11389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      insecticide;
                                                                                        1000 or
                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                     cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.

sequences (ABL01840 (ABB57737-ABB72072)

The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABLIG176-ABLIG11), expressed DNA sequences (ABLIG176-ABLIG1), expressed DNA sequences (ABLIG176-ABLIG1), expressed DNA sequences (ABLIG1840-ABLIG175) and the encoded proteins

is

```
RESULT 4
ABL15450/c
ID ABL154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL018176-ABL30511), expressed DNA sequences (ABL018176-ABL30511), expressed DNA sequences (ABL018176-ABL305177-ABB72072).
                                                      New isolated nucleic agenes from Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from at ftp.wipo.int/pub/published_pct_sequences.
Claim 1; SEQ ID NO 40832; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                          23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                       P-PSDB;
                                                                                                                                                                                                                                                                                                                    23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                  WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pharmaceutical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster expressed polynucleotide SEQ ID NO 40832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABL15450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABL15450 standard; cDNA; 4310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2684 BP;
                                          interactions
                                                                                                                                                                                Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2101
                                                                                                                                        2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17;
                                                                                                                                                                              'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                       PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCTCTCACGCTCTCAT 23
                                                                                                                                                                                                                       CORP NY
                                                                                                                                                                              Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCACGCTCTCAT 2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            807 A; 534 C; 541 G;
                                                          acid
a and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32.7%;
                                                                                                                                                                              Ľ
                                                                                                                                                                              PWD,
                                                        detection reagent for detecting 1000 for elucidating cell signalling and c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                                              Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NO.
                                                                                                                                                                              E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            802 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2
7.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2684;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                        0 or more cell-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

밁 ş

```
RESULT 5
AAA31959
  RESULT 6
AAA31675
                                                       멍
                                                                            á
                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SO
                                                                                                         Matches
                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                              and associated flanking species. The sequences comprise a central core repeat sequence, especially selected from the sequences AAA32094-A32096 with left and right flanking sequences. The polymucleotide sequences can be used in the detection of DNA polymorphisms, in genome mapping, in physical mapping, in positional cloning of genes, in variety identification and in evaluation of genetic variability within and between plant tissues, populations, cultivars, species and species groups. They may also be used to design hybridization probes for oligonucleotide fingerprinting and library screening and to design primers for microsatellite-primed PCR. Microsatellite markers are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plant microsatellite sequence; core repeat sequence; detection; probe; DNA polymorphism; genome mapping; physical mapping; fingerprinting; variety identification; genetic variability evaluation; primer; ss.
                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                               Sequences AAA31040-A32093 represent novel plant microsatellite sequences
                                                                                                                                                                                                                                                                                                                                                             Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-116958/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W09967421-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plant microsatellite marker #920.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAA31959
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Havukkala IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity nes 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                   plant microsatellite markers and associated flanking detection of polymorphic genetic markers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         848
                                                       157
                                                                               21
                                                                                                         16;
                                                                                                                                                                                     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENESIS RES & DEV CORP LTD FLETCHER CHALLENGE FORESTS
                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4310
                                                                      CATCGCTCTCGTCGCT 36
                                                                                                                                                           276 BP;
                                                                                                                                                                                                                                                                                                                                                          Page 347; 392pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCTCTCACGCTCTCAT
                                                      CATCGCTCTCGTCGCT 172
                                                                                                                                                                                     locate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP; 1181 A; 938 C; 946 G; 1245 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bloksberg LN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0105307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-NZ00092
                                                                                                                                                           60 A; 82 C;
                                                                                                                                                                                    specific economically useful genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32.7%;
                                                                                                      30.8%; So
100.0%; F
tive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 17;
Pred. No.
                                                                                                                     Score 16;
Pred. No.
                                                                                                                                                           88 G; 46 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glenn M;
                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FLETCHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 23; Length 4310;
                                                                                                                     DB
27;
                                                                                                                                 21; Length 276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                         Indels
                                                                                                                                                                                  in plant
                                                                                                                                                                                                                                                                                                                                                                                                 species for
                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>;</u>
                                                                                                                                                                                    genomes
                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                     RESULT 7
AAA31705
SXXXXXXXXXXXXXXX
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                 and associated flanking species. The sequences comprise a central core repeat sequence, especially selected from the sequences AAA32094-A32096 with left and right flanking sequences. The polynucleotide sequences can be used in the detection of DNA polymorphisms, in genome mapping, in physical mapping, in positional cloning of genes, in variety identification and in evaluation of genetic variability within and between plant tissues, populations, cultivars, species and species groups. They may also be used to design hybridization probes for oligonucleotide fingerprinting and library screening and to design primers for microsatellite-primed PCR. Microsatellite markers are
                   Plant microsatellite sequence; core repeat sequence; detection; probe; DNA polymorphism; genome mapping; physical mapping; fingerprinting; variety identification; genetic variability evaluation; primer; ss.
Eucalyptus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plant microsatellite sequence; core repeat sequence; detection; pro DNA polymorphism; genome mapping; physical mapping; fingerprinting; variety identification; genetic variability evaluation; primer; ss.
                                                                                                     05-JUL-2000
                                                                                                                                                                                                                                                                                                                               Sequence 357 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequences AAA31040-A32093 represent novel plant microsatellite sequences
                                                                          Plant microsatellite marker #666.
                                                                                                                                                       AAA31705
                                                                                                                                                                                                                                                                                                                                                        useful to locate specific economically useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page 264; 392pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-116958/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Havukkala IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GENE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-DEC-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9967421-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eucalyptus grandis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plant microsatellite marker #636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA31675 standard; DNA; 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       plant microsatellite markers and detection of polymorphic genetic
                                                                                                                                                                                                                         154
                                                                                                                                                                                                                                                 21
                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENESIS RES & DEV CORP LTD & FI
FLETCHER CHALLENGE FORESTS LTD.
                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                       standard; DNA; 438
                                                                                                                                                                                                                        CATCGCTCTCGTCGCT
                                                                                                                                                                                                                                                  CATCGCTCTCGTCGCT
grandis
                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                   (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bloksberg LN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0105307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-NZ00092
                                                                                                                                                                                                                                                                                                                                78 A; 92 C; 109
                                                                                                                                                                                                                                                                           100.0%; tive 0;
                                                                                                                                                                                                                                                                                                      30.8%;
                                                                                                                                                                                                                         169
                                                                                                                                                                                                                                                  36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP
                                                                                                                                                       ВP
                                                                                                                                                                                                                                                                                        Score 16; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Glenn M;
                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                <u>ი</u>
                                                                                                                                                                                                                                                                                                                             78 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      associated flanking species
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FLETCHER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           markers
                                                                                                                                                                                                                                                                                        DB 21; Length 357; 27;
                                                                                                                                                                                                                                                                                                                                other;
                                                                                                                                                                                                                                                                                                                                                        genes in plant
                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      detection; probe;
                                                                                                                                                                                                                                                                           <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                        genomes
                                                                                                                                                                                                                                                                           Gaps
```

```
AAS84162/c
ID AAS84162 standard; c
XX
AC AAS84162;
XX
13-FEB-2002 (first
XX
DT 13-FEB-2002 (first
XX
DT 13-FEB-2002 (first
XX
DT 13-FEB-2002 (first
XX
DT 13-FEB-2002 (first
XX
DNA encoding novel h
XX
KW Human; chromosome ma
KW food supplement; med
XX
Homo sapiens.
XX
WO200175067-A2.
XX
PN WO200175067-A2.
XX
PP 30-MAR-2001; 2001WO-1
XX
PF 30-MAR-2001; 2000US-1
PR 23-AUG-2000; 2000US-1
XX
PR 23-AUG-2000; 2000US-1
XX
PA (HYSE-) HYSEQ INC.
XX
PI Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequences AAA31040-A32093 represent novel plant microsatellite sequences and associated flanking species. The sequences comprise a central core repeat sequence, especially selected from the sequences AAA32094-A32096 with left and right flanking sequences. The polynucleotide sequences can be used in the detection of DNA polymorphisms, in genome mapping, in physical mapping, in positional cloning of genes, in variety identification and in evaluation of genetic variability within and between plant tissues, populations, cultivars, species and species groups. They may also be used to design hybridization probes for oligonucleotide fingerprinting and library screening and to design primers for microsatellite-primed PCR. Microsatellite markers are
                                                                                31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                  30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                            Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder;
                                                                                                                                                                                                                                                                                                              DNA encoding novel human diagnostic protein #19966.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 438 BP; 100 A; 107 C; 125 G; 106 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             useful to locate specific economically useful genes in plant genomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-116958/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9967421-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GENE-) GENESIS RES & DEV CORP LTD & FLETCHER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (FLET-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              plant microsatellite markers and detection of polymorphic genetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCGCTCTCGTCGCT 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATCGCTCTCGTCGCT 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 273; 392pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bloksberg LN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0105307.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-NZ00092
                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA; 598
                  Tang YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30.8%; Score 16; DB
100.0%; Pred. No. 27,
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                  ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Glenn M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               associated flanking species markers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21; Length 438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC35333/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC polymucleotides are also used in diagnostics as expressed sequence tags CC for identifying expressed genes. (I) is useful in gene therapy techniques CC to restore normal activity of (II) or to treat disease states involving CC (II). (II) is useful for generating antibodies against it, detecting or CC quantitating a polypeptide in tissue, as molecular weight markers and as CC a food supplement. (II) and its binding partners are useful in medical CC imaging of sites expressing (II). (I) and (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. CC The polypeptide and polynucleotide sequences have applications in CC diagnostics, forensics, gene mapping, identification of mutations CC responsible for genetic disorders or other traits to assess biodiversity CC and to produce other types of data and products dependent on DNA and CC amino acid sequences. AMS4197-AAS94564 represent novel human CC diagnostic coding sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed conference in the printed conference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 16
                                       25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
29-MAR-1999;
                       01-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                            Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 598 BP; 144 A; 166 C; 171 G; 117 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                  25-FEB-2000;
                                                                                                                                                                                                                                            06-SEP-2000
                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                     metabolic pathway; promoter; termination sequence;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana DNA fragment SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAC35333 standard; DNA; 638 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes,
                                                                                                                                                                                                                                                                                        EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; SEQ ID No 19966; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; ABG19975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCATCGCTCTCGTCG 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCATCGCTCTCGTCG 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                2000EP-0301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                    99US-0126785
99US-0127462
                                                                                   99US-0123548
99US-0125788
                                                              99US-0126264
                                                                                                                                 99US-0123180
                                                                                                                                                      99US-0121825
99US-0128234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30.8%; 5c
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 27;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 23;
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NO: 9808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ת ת ת ת ת ת ת ת ת ת ת ת ת ת ת ת ת ת ת
1144 17 114 114 114 114 114 114 114 114	08-API 16-API 19-API 21-API 23-API 23-API 28-API 30-API 30-API 30-MA 06-MA 06-MA
111 - MAY 199 144 - MAY 199 145 - MAY 199 146 - MAY 199 147 - MAY 199 147 - MAY 199 148 - MAY 199 149 - MAY 199 14	
\$\times \times \	<i>•••••••••••••••••••••••••••••••••••••</i>
2000	20066 20066 20066 20066 20066 20066
44218 44218 44218 44218 44218 44218 44218 44321 44321 44333 4433 443	3714 300445 30449 30510
\cdot	
אים שים יים יים יים יים יים יים יים יים י	ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק
111100066554432201111100110011111111111111111111111	222222222222
23-JUL-11 263-JUL-11 27-JUL-11 28-JUL-11 28-JU	
00000000000000000000000000000000000000	00000000000000000000000000000000000000
00000000000000000000000000000000000000	
22224 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

```
망
                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 16
              New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity -
Claim 1; SEQ ID No
                                                                   WPI; 2001-639362/73
                                                                                    Drmanac
                                                                                                                    31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                     (HYSE-)
                                                                                                                                             30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                              WO200175067-A2
                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                             Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder; ss.
                                                                                                                                                                                                                                       DNA encoding novel human diagnostic protein #4818
                                                                                                                                                                                                                                                          13-FEB-2002
                                                                                                                                                                                                                                                                          AAS69014;
                                                                                                                                                                                                                                                                                           AAS69014 standard; cDNA; 1582
                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-OCT-1999;
26-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-OCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-OCT-1999;
21-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-OCT-1999;
14-OCT-1999;
                                                                                                                                                                                                                                                                                                                                     609
                                                                                                                                                                                                                                                                                                                                                     μ
                                                                                                                                                                                                                                                                                                                                                                     l Similarity
16; Conserv
                                                                                   RT,
                                                                                                     HYSEQ INC.
                                                           ABG04827.
                                                                                                                                                                                                                                                                                                                                   ATGCAGTTCTCTCACG 16
                                                                                   Liu C,
                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0161406.
99US-0161359.
99US-0161360.
99US-0161361.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0159637.
99US-0159638.
99US-0159584.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US
                                                                                                                                                                                                                                                                                                                                                                                                       99US-0162142
                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0161992
                                                                                                                                                                                                                                                                                                                                                                                                                                99US-0161920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0161404.
99US-0161405.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0160981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0160980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0160814
99US-0160815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0160770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0160768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0160767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0159295
99US-0159329
4818; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                               -0161993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -0160989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -0160741
                                                                                                                                                                                                                                                                                                                                                                           30.8%;
                                                                                  Tang YT
                                                                                                                                                                                                                                                                                                                                    594
                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                             Score 16; Pred. No.
                                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                            DB 21;
. 27;
                                                                                                                                                                                                                                                                                                                                                                                    Length 638;
                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                   0
```

```
RESULT 11
AAD28124
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  XAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CC The invention relates to isolated polynucleotide (I) and CC polypeptide (II) sequences. (I) is useful as hybridisation probes, CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CPC polynucleotides are also used in diagnostics as expressed sequence tags CC for identifying expressed genes. (I) is useful in gene therapy techniques CC (II). (II) is useful for generating antibodies against it, detecting or QUANTITATION of (II) or to treat disease states involving CC (II). (II) is useful for generating antibodies against it, detecting or QUANTITATION of the sequence states involving appropriate in itssue, as molecular weight markers and as CC imaging of sites expressing (II). (I) and (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. CC The polypeptide and polynucleotide sequences have applications in CC diagnostics, forensics, gene mapping, identification of mutations can be produce other types of data and products dependent on DNA and CC amino acid sequences. AAS64197-AAS94564 represent novel human CC diagnostic coding sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO CC at ftp. wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 16; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; leucine-rich repeat-8; ZLRR8; cytostatic; gene therapy; leukaemia; endometrial adenocarcinoma; renal cell; colon; prostrate; retinoblastoma; cell growth disorder; glioblastoma; neuroblastoma; kidney tumour; lung; mammary gland; germ cell; bladder; oesophagus; pancreas; animal feed; rhabdomyosarcoma; genitourinary tract; chromosome 11q13; ds.
                                    30-JUN-2000; 2000US-215446P.
                                                                         02-JUL-2001; 2001WO-US20999.
                                                                                                                                                                                                                     mat_peptide
                                                                                                                                                                                                                                                        sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human leucine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-APR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD28124 standard; DNA; 1653 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1582 BP; 216 A; 603 C; 483 G; 279 T; 1 other;
(ZYMO ) ZYMOGENETICS INC
                                                                                                             10-JAN-2002
                                                                                                                                              WO200202604-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1380 CGCTGCCGGCCTCGCC 1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cecrecceeccreece 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                     /*tag= b
55..1653
                                                                                                                                                                                                                                                                           /partial
                                                                                                                                                                                                                                                                                             /product= "2
/note= "CDS
                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                 product= "Mature ZLRR8 protein"
                                                                                                                                                                                                                                                                                                                                   '*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                "ZLRR8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>.</u>
                                                                                                                                                                                                                                                                                                does
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ZLRR8) DNA #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                         protein"
not include stop codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1582;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
AAF76853
ID AAF77
XX
AC AAF7
XX
DT 14-P
XX
DT 14-P
DT Huma
DE Huma
DE Huma
DE Huma
CX

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to an isolated polypeptide comprising leucine-rich repeat proteins 21rr7, 21rr8, 21rr9 and spliced variants of 21rr8, 21rr9. 21rr7, 21rr8, and 21rr9 proteins are useful in directing the secretion of proteins of interest from a host cell and to monitor the secretion of proteins in general from cells and tissues. The 21rr DNA and proteins are useful in diagnosing and treating disorders related to abnormal cell growth, including retinoblastoma, renal cell adenocarcinoma, endometrial adenocarcinoma, glioblastoma, neuroblastoma, B-cell lymphotic leukaemia, kidney tumours, germ cell tumours, lung large cell carcinoma, mammary, kidney tumours, germ cell tumours, lung large cell carcinoma, mammary, kidney tumours, germ cell tumours, lung large cell carcinoma, mammary,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; secreted protein; immunomodulatory; antisclerotic; dermatological; immunosuppressive; antiinflammatory; anti-HIV; immunostimulant; cytostatic; cardiant; vascular; anti-angiogenic; ophthalmological; neuroprotectant; nootropic; anticonvulsant; vaccine; antialzheimers; antiparkinsonian; antimicrobial; vulnerary; gene therapy; immune disorder; hyperproliferative; cardiovascular; angiogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  colon adenocarcinoma, genitourinary tract transitional cell tumours, rhabdomyosarcoma, lung tumour, bladder tumour, oesophagus, pancreas and prostate adenocarcinoma. Zlrr protein is useful for identifying agonists and antagonists of the polypeptide, for drug design, to screen for cell metabolism effecting receptors, for analysis of cell phenotype, and as animal feed supplement and cell culture components. Zlrr DNA is also useful in gene therapy. The present sequence is human Zlrr8 DNA. Zlrr8 gene is located on chromosome 11q13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     diagnosing and treating disorders related to abnormal cell growth retinoblastoma, renal cell, endometrial adenocarcinoma, leukemia, kidney and lung tumors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Thayer EC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human secreted protein cDNA #11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF76853 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1653 BP; 223 A; 617 C; 526 G; 287 T; 0 other;
                                                                (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                     15-AUG-2000; 2000WO-US22350
                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                      neurological; infection;
                                                                                                                              16-AUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1496
                                                                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
S
   Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 64-67; 82pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sheppard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
   PE,
                                                                                                                           99US-0148759.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA; 1872
   Ebner R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,
Od
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                      ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Presnell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 16;
Pred. No.
   Soppet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
   DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
   SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1653;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            growth e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
RESULT 13
AAD38695
ID AAD38
XX AAD38
XX AAD38
XX AAD38
XX Human
XX FFT CDS
FT C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CC The present sequence is one of 18 nucleic acid molecules encoding novel the prevention, diagnosis and treatment of diseases including immune cC disorders (e.g. multiple sclerosis, systemic lupus erythematosus and thoman immunodeficiency virus (HIV) infections), hyperproliferative cC disorders (e.g. cancers and Gaucher's disease), cardiovascular diseases (e.g. Scimitar syndrome, Chaga's cardiomyopathy and coronary cC arteriosclerosis), angiogenic disorders (e.g. corneal graft neovascularisation and diabetic retinopathy), neurological disorders (e.g. Huntington's chorea, Alzheimer's disease and parkinson's disease), infectious diseases and/or for promoting wound healing, regeneration cc and/or chemotaxis. The nucleic acid molecules may also be used as DNA probes in diagnostic assays to detect and quantitate the presence of similar nucleic acid sequences in samples. The polypeptides may also be used as antigens in the production of antibodies and in assays to detect the presence of cidentify modularors of foretain expression and article.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; secreted protein; atherosclerosis; Alzheimer's disease; LP220; diabetic retinopathy; severe combined immunodeficiency; pancreatitis; rheumatoid arthritis; colorectal adenoma; haemolytic anaemia; cancer; reperfusion injury; arteriosclerosis; wound healing; transgenic anima gene therapy; neoplasm; transgenic; psoriasis; ischaemia; carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding 18 human secreted polypeptides, useful for preventing, diagnosing and/or treating e.g. cancers, Parkinson's disease and diabetic retinopathy -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-244245/25.
P-PSDB; AAB70072.
                                                                                   04-APR-2002
                                                                                                                                                                                                                                                mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1872 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; Page 354-355; 380pp; English
                                                                                                                                                                                                                                                                                                         sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chomosome 11q13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human LP220 secreted protein encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD38695;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD38695 standard; cDNA; 2369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         identify modulators of protein expression and activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cecreceeccicec 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cecrecceeccreece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first
                                                                                                                                                                                                                                                /*tag= b
215..2071
                                                                                                                                                                                                                                                                                                         /product=
                                                                                                                                                                                           /*tag= c
/product=
                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
167..2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30.8%;
                                                                                                                                                                                                                  ົດ
                                                                                                                                                                                                                                                                                 ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   659 C;
                                                                                                                                                                                           "Mature
                                                                                                                                                                                                                                                                                                                                      "Human LP220 secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   604 G;
                                                                                                                                                                                              human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26;
                                                                                                                                                                                              LP220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                              secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

14-SEP-2001; 2001WO-US26026

```
RESULT 14
ABV99421
        ₽
                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                Human; anti-HIV; cytostatic; antidiabetic; antiasthmatic; cachexia; AIDS; antinflammatory; cardiant; haemostatic; neuroprotective; anorectic; nootropic; immunosuppressive; osteopathic; antiparkinsonian; cancer; antinifertility; cerebroprotective; gene therapy; NOVX; NOV; fertility; metabolic disorder; diabetes; obesity; infectious disease; anorexia; neurodegenerative disease; Alzheimer's disease; Parkinson's disease; immune disorder; haematopoietic disorder; cardiovascular disorder; bronchial asthma; dyslipidemia; metabolic disturbance; neurogenesis; metabolic syndrome X; wasting disorder; cell differentiation; gene; cell proliferation; haematopoiesis; wound healing; angiogenesis; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acid molecules encoding such polypeptides. Novel secreted proteins of the invention are used for treating diseases such as atherosclerosis, Altheimer's disease, diabetic retinopathy, psoriasis, pancreatitis, arteriosclerosis, rheumatoid arthritis, colorectal adenomas, severe combined immunodeficiency, ischaemia, carcinomas, haemolytic anaemia, reperfusion injury, neoplasms and cancer especially liver cancer. They are also used for wound healing. Polynucleotides of the invention can be used to generate transgenic animals or knock out animals, which in turn, are useful in the development and screening of therapeutically useful reagents for use in the treatment of diseases associated with LP polypeptide associated activity. They are also used in gene therapy. The present sequence is human LP220 secreted protein encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel proteins and polynucleotides of secreted proteins useful for treating various diseases e.g. rheumatoid arthritis, cancer, psoriasis, diabetic retinopathy, arteriosclerosis, ischemia or reperfusion injury
      08-MAR-2001; 2001US-274101P
                            08-MAR-2002; 2002WO-US07288.
                                                    19-SEP-2002.
                                                                          WO200272771-A2
                                                                                                                                                                                                                                                Human NOV44b coding sequence.
                                                                                                                                                                                                                                                                           27-JAN-2003
                                                                                                                                                                                                                                                                                                                        ABV99421 standard; DNA; 2451 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2369 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-SEP-2000; 2000US-236088P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ELIL ) LILLY & CO
                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  invention relates to human secreted polypeptides designated 1. LP217, LP220, LP221, LP222, LP239, LP237 or LP238 and nuc
                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002-471259/50
                                                                                                                                                                                                                                                                                                                                                                                                    33 CGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAE23980
                                                                                                                                                                                                                                                                                                                                                                                CGCTGCCGGCCTCGCC 1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page 124-127; 145pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        342 A; 855 C; 755 G; 417 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ELI.
                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 16;
; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   24;
                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2369;
                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                          0
  WPI; 2002-732824/79
```

```
PR 08-MAR-2001; 2001US-274194P
PR 08-MAR-2001; 2001US-274322P
PR 09-MAR-2001; 2001US-275255P
PR 11-MAR-2001; 2001US-275255P
PR 11-MAR-2001; 2001US-275601P
PR 11-MAR-2001; 2001US-275601P
PR 11-MAR-2001; 2001US-27576P
PR 11-MAR-2001; 2001US-277761P
PR 20-MAR-2001; 2001US-277791P
PR 20-MAR-2001; 2001US-277791P
PR 20-MAR-2001; 2001US-277931P
PR 20-MAR-2001; 2001US-277931P
PR 20-MAR-2001; 2001US-277931P
PR 20-MAR-2001; 2001US-27931P
PR 20-MAR-2001; 2001US-2
```

Rastelli L, Mezes PD, Smithson G, Guo X, Gerlach V, Casman SJ; Boldog FL, Li L, Zerhusen BD, Tchernev VT, Gangolli EA; Vernet CAM, Pena CEA, Burgess CE, Liu X, Spytek KA, Gorman L; Spaderna SK, Voss EZ, Malyankar UM, Anderson DW, Patturajan M; Miller CE, Taupier RJ, Padigaru M, Shenoy SG, Kekuda R, Gusev VY; Pochart PF, Zhong M;

```
RESULT 15
ABV99422
ID ABV99
XX
AC ABV99
XX
OT 27-J
XX
Hum
KW Hum
KW Ant
KW ant
KW ant
KW in
KW E
XX
XX
PD
XX
PN
XX
PD
XX
PD
XX
PP
XX
PP
XX
PP
XX
PP
XX
PP
PR
PR
PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coding sequences (ABV99327-ABV9955 and ABP70049-ABP70149), where X is any number from 1 to 48. The NOVX proteins and coding sequences are useful in the manufacture of a medicament for treating a syndrome associated with a human disease, preferably a NOVX-associated disorder. The NOVX coding sequences and proteins are useful for treating. The NOVX coding sequences and proteins are useful for treating. The NOVX coding sequences and proteins are useful for treating. The NOVX coding sequences and proteins are useful for treating. The NOVX coding sequences and proteins are useful for treating. The NOVX coding sequences is associated diseases, Alzheimer's disease, Parkinson's conserv, neurodegenerative diseases, Alzheimer's disease, Parkinson's conserv, neurodegenerative diseases, Alzheimer's disease, Parkinson's conserv, neurodegenerative diseases, Alzheimer's disease, Parkinson's conserv, meurodegenerative diseases, Alzheimer's disease, Parkinson's conserv, neurodegenerative diseases, Alzheimer's disease, Parkinson's conserv, meurodegeneration of diseases or various cancers. The NOVX coding sequences and proteins may also be used as targets for the constitution of small molecules that modulate or inhibit e.g. cell differentiation, cell proliferation, haematopoiesis, wound healing and angiogenesis, in gene therapy, in generation of the control of the con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                    Human; anti-HIV; cytostatic; antidiabetic; antiasthmatic; cachexia; AIDS; antiinflammatory; cardiant; haemostatic; neuroprotective; anorectic; nootropic; immunosuppressive; osteopathic; antiparkinsonian; cancer; antiinfertility; cerebroprotective; gene therapy; NOVX; NOV; fertility; metabolic disorder; diabetes; obesity; infectious disease; anorexia; neurodegenerative disease; Alzheimer's disease; Parkinson's disease; immune disorder; haematopoietic disorder; cardiovascular disorder; bronchial asthma; dyslipidemia; metabolic disturbance; neurogenesis; metabolic syndrome X; wasting disorder; call differentiation; gene; metabolic syndrome X; wasting disorder; call differentiation; gene;
        08-MAR-2001; 2001US-274101P.
08-MAR-2001; 2001US-274194P.
08-MAR-2001; 2001US-274281P.
08-MAR-2001; 2001US-274322P.
                                                                                                                                       08-MAR-2002; 2002WO-US07288.
                                                                                                                                                                                                                                                WO200272771-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 16; Page 262-263; 619pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; ABP70143.
                                                                                                                                                                                           19-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human NOV44c coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABV99422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  therapeutic or diagnostic methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lagnosing or treating lands or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 present invention relates to
                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                   proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polypeptides and polynucleotides, useful for preventing,
.ng or treating NOVX-associated disorders e.g. diabetes, cancer,
.r's disease, dyslipidemias, obesity, immune or hematopoietic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cecreceeccreece 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP; 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ntion relates to new isolated proteins (NOVX) and their (ABV99327-ABV99595 and ABP70049-ABP70149), where X is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                   haematopoiesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Α;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ູດ
                                                                                                                                                                                                                                                                                                                                              ler; cell differentiation; gene;
wound healing; angiogenesis; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .<del>.</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24; Length 2451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
     New NOVX polypeptides and polynucleotides, useful for preventing
```

```
19-MAR-2001
20-MAR-2001
20-MAR-2001
20-MAR-2001
20-MAR-2001
21-MAR-2001
21-MAR-2001
22-MAR-2001
23-MAR-2001
26-MAR-2001
27-MAR-2001
27-MAR-2001
27-MAR-2001
27-MAR-2001
27-MAR-2001
27-MAR-2001
27-MAR-2001
27-MAR-2001
30-MAR-2001
30-MAR-2001
31-MAY-2001
11-MAY-2001
11-MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-MAR-2001;
12-MAR-2001;
13-MAR-2001;
13-MAR-2001;
                                                                Rastelli L, Mezes PD, Smithson G, G
Boldog FL, Li L, Zerhusen BD, Tcher
Vernet CAM, Pena CEA, Burgess CE, L
Spaderna SK, Voss EZ, Malyankar UM,
Miller CE, Taupier RJ, Padigaru M,
Pochart PF, Zhong M;
                                                                                                                                                                                       Rastelli L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-MAR-
16-MAR-
P-PSDB; ABP70144.
                       2002-732824/79
                                                                                                                                                                                                                                             CURAGEN CORP.
                                                                                                                                                                                                                                                                                       2001US-337426P.
2001US-338092P.
2001US-337185P.
2002US-345705P.
2002US-0093463.
                                                                                                                                                                                                                                                                                                                                                                                                                2001US-332272P.
2001US-333184P.
2001US-333272P.
2001US-332094P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001US-288342P.
2001US-288528P.
2001US-291190P.
2001US-291099P.
2001US-291240P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001US-
2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001US-325681P
2001US-330380P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001US-318770P
2001US-325430P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001US-
2001US-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001US-287424P
2001US-288066P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001US-280802P
2001US-280822P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001US-277321P
2001US-277327P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001US-277239P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -318462P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -279036P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -278894P
                                                                                       Smithson G, Guo X, Gerlach V, Casman usen BD, Tchernev VT, Gangolli EA; Burgess CE, Liu X, Spytek KA, Gorman Malyankar UM, Anderson DW, Patturajan Padigaru M, Shenoy SG, Kekuda R, Gus
```

Gusev VY;

S

```
RESULT 16
AAK99609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KW antithyroid; antiinflammatory; anthelmintic; antidabetic; nephrotropic; KW aphthalmological; immunosuppressive; dermatological; antiulcer; KW antirheumatic; antiarthritic; antibacterial; virucide; fungicide; KW antirheumatic; protozoacide; tranquiliser; vulnerary; anti-HIV; KW noutropic; neuroprotective; anticonvulsant; cerebroprotective; KW neuroleptic; molecules for disease detection and treatment; MDDT; KW immunogen; cancer; actinic keratosis; arteriosclerosis; atherosclerosis; kW ursitis; cirrhosis; hepatitis; psoriasis; AIDS; rheumatoid arthritis; KW adult respiratory distress syndrome; Addison's disease; allergy; anaemia; KW asthma; osteoporosis; autoimmune; haemolytic anaemia; scleroderma; KW asthma; osteoporosis; autoimmune; haemolytic anaemia; scleroderma; KW diabetes mellitus; Graves' disease; glomerulonephritis; KW diabetes mellitus; Graves' disease; glomerulonephritis; KW systemic lupus erythematosus; systemic sclerosis; ulcerative colitis; KW haemodialysis; uveitis; trauma; Alzheimer's; Pick disease; WW haemodialysis; uveitis; trauma; Alzheimer's; Pick disease; KW Huntington's disease; ampotrophic lateral sclerosis; dementia; KW haemodialysis; uveitis; trauma; Alzheimer's; epilepsy; stroke; KW Huntington's disease; ampotrophic lateral sclerosis; dementia; metabolic; endocrine; toxic myopathy; menoral coloric metabolic; endocrine; toxic myopathy; kw nariadic naralveis- menoral disorder; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to new isolated proteins (NOVX) and their CC coding sequences (ABY99327-ABV9955 and ABP70049-ABP70149), where X is CC any number from 1 to 48. The NOVX proteins and coding sequences are Useful in the manufacture of a medicament for treating a syndrome CC associated with a human disease, preferably a NOVX-associated disorder. The NOVX coding sequences and proteins are useful for treating.

CC preventing or diagnosing diseases such as metabolic disorders, diabetes, cobssity, infectious disease, anorexia, cancer-associated cachexia, CC cancer, neurodegenerative diseases, Alzheimer's disease, Parkinson's CC disease, immune disorders, haematopoietic disorders, cardiovascular CC disease, fertility bronchial asthma, AIDS, dyslipidemia, metabolic diseases, immenes associated with obseity, metabolic syndrome X or wasting CC disorders associated with chronic diseases or various cancers. The NOVX coding sequences and proteins may also be used as targets for the CC identification of small molecules that modulate or inhibit e.g.

CC neurogenesis, cell differentiation, cell proliferation, haematopoiesis, underthode that bind immunospecifically to NOVX substances for use in the representation of antibodies that bind immunospecifically to NOVX substances for use in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                    WO200296951-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytostatic; antiatherosclerotic; osteopathic; antiarteriosclerotic; hepatotropic; antipsoriatic; antiallergic; antianaemic; antiasthmatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MDDT related human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAK99609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAK99609 standard; DNA; 2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2563 BP; 371 A; 921 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            disorders, and asthma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              diagnosing or treating NOVX-associated disorders e.g. diabetes, cancer, Alzheimer's disease, dyslipidemias, obesity, immune or hematopoietic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            therapeutic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1679 CGCTGCCGGCCTCGCC 1694
                                                                sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTGCCGGCCTCGCC 48
                                                                                                               paralysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 263-264; 619pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or diagnostic methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA SEQ ID No 73
                                                                                                                    mental disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         857 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      414 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24; Length 2563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
8
                                 ঠ
                                                                                                                                                            CC 1250 residue amino acid sequences, given in the specification, or a biologically active or immunogenic fragment of the isolated polypeptide is useful for screening a compound for CC The isolated polypeptide is useful for screening a compound for CC effectiveness as an agonist or antagonist of the isolated polypeptide. CC polyclonal or monoclonal antibodies by hybridoma technology. The cC isolated polypeptide and its encoding polynucleotide are useful for CC diagnosis, treatment and prevention of cancer. actinic keratosis, catheriosclerosis, atherosclerosis, bursitis, cirrhosis, hepatitis, CC arteriosclerosis, attherosclerosis, bursitis, cirrhosis, hepatitis, CC allergies, anaemia, authiman atherosclerosis, osteoporosis, autoimmune CC haemolytic anaemia, autoimmune thyroiditis, Crohn's disease, atopic cernatitis, diabetes mellitus, Graves' disease, glomerulonephiritis, CC theumatoid arthritis, scleroderma, systemic lupus erythematosus, CC systemic sclerosis, ulcerative colltis, hemodialysis, uveitis, viral, bacterial, fungal, parasitic, protozoal, helminthic infections, trauma, CC Alzheimer's and Pick disease, Parkinson disease, amyotrophic lateral colletosis, epilepsy, stroke, Huntington's disease, multiple sclerosis, cother developmental disorders of the central nervous system, and cother extrapyremidal disorder; motor neuron disorder, and cother extrapyremidal disorder in motor neuron daviers amens l'disorder in and toxic myopathies, amens l'disorder in and toxic myopathies, and conterio any tandon any et vandon.
                                                                                                 Query Match
Best Local :
                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Recipon SA, K
Thangavelu K,
Honchell CD,
Ramkumar J, M
                                                                                                                                                            Sequence
                                                                                                                                                                                                               periodic paralysis, mental disorders including mood, anxiety and schizophrenic disorders, anaemia, renal tubular acidosis, epilepsy, hypothyroidism, glaucoma, sensorineural hearing loss and cataract. This polynucleotide sequence represents the DNA encoding a human MDDT protein polynucleotide sequence represents the DNA encoding a human MDDT protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel molecules for disease detection and treatment and polynucleotide encoding them useful for diagnosing, preventing or treating cell proliferative, autoimmune/inflammatory, neurological and developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2001; 2001US-295257P
08-JUN-2001; 2001US-297220P
21-JUN-2001; 2001US-300526P
29-JUN-2001; 2001US-301874P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to an isolated polypeptide chosen from molecules for disease detection and treatment (MDDT), comprising a one of 39 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 128; Page 255; 260pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAO26256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2003-140448/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tran UK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Richardson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (INCY-) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-MAY-2001; 2001US-293723P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-MAY-2002; 2002WO-US16676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-DEC-2002
1862
                                 33 cecrecceccreec 48
                                                                            l Similarity
16; Conserv
                                                                                                                                                            2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yue H, Baughn MR, Duggan BM, Warren BA, Bandman n TW, Burford N, Sanjanwala B, Becha SD, Yao MG, Hafalia AJA, Griffin JA, Swarnakar A, Elliott VS, A, Khan FA, Lee EA, Yue H, Lu DAM, Walia NK; Lu K, Arvizu CS, Xu Y, Ison CH, Huang J, Ding L; CD, Borowsky ML, Emerling BM, Peterson DP, Lu Y; J, Mason PM, Zebarjadian Y, Azimzai Y, Stuve LL;
                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mason PM, Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002US-359413P
                                                                                                                                                          BP;
                                                                                                                                                                                                   invention.
                                                                                                                                                        361 A; 928
                                                                                             100.0%;
                                                                                                                    30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lee S, Kable AE;
                                                                            0
                                                                                               Score 16; Pred. No
                                                                                                                                                        C; 818
                                                                          Mismatches
                                                                                                                                                ຸດ
                                                                                                 .
0
                                                                                                                                                        461
                                                                                                                  DB
                                                                                                                  25;
                                                                                                                                                        T; 1
                                                                          0
                                                                                                              Length 2569;
                                                                                                                                                        other;
                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Elliott VS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bandman O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a one of 39 114-
                                                                          <u>,,</u>
                                                                        Gaps
```

RESULT

```
Human; anti-HIV; cytostatic; antidiabetic; antiasummatory; cardiant; haemostatic; neuroprotective; anorectic; nootropic; immunosuppressive; osteopathic; antiparkinsonian; cancer; antiinfertility; cerebroprotective; gene therapy; NOVX; NOV; fertility; metabolic disorder; diabetes; obesity; infectious disease; anorexia; neurodegenerative disease; Alzheimer's disease; Parkinson's disease; immune disorder; haematopoietic disorder; cardiovascular disorder; bronchial asthma; dyslipidemia; metabolic disturbance; neurogenesis; metabolic syndrome X; wasting disorder; cell differentiation; haematopoiesis Single nucleotide polymorphism; SNP; cell proliferation; haematopoiesis
08-WAR-2001
08-WAR-2001
08-WAR-2001
08-WAR-2001
09-WAR-2001
12-WAR-2001
13-WAR-2001
13-WAR-2001
13-WAR-2001
14-WAR-2001
19-WAR-2001
19-WAR-2001
20-WAR-2001
20-WAR-2001
20-WAR-2001
20-WAR-2001
20-WAR-2001
20-WAR-2001
21-WAR-2001
                                                                                                                                                                                                                                                                                                                                                                                             19-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                  WO200272771-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human NOV44a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABV99420 standard; DNA; 3201
2001US-274281P
2001US-27432P
2001US-274849
2001US-275578P
2001US-275578P
2001US-275601P
2001US-276000P
2001US-2767094P
2001US-277321P
2001US-277327P
2001US-277327P
2001US-277331P
2001US-277331P
2001US-277331P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-277831P
2001US-27893P
2001US-27893P
2001US-278894P
2001US-278894P
2001US-278894P
2001US-278894P
2001US-278894P
2001US-278894P
2001US-278894P
2001US-278894P
2001US-288802P
2001US-288802P
2001US-288802P
2001US-2888090P
2001US-2888090P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                 2001US-274101P.
2001US-274194P.
                                                                                                                                                                                                                                                                                                                                                                     2002WO-US07288
                                                                                                                                                                                                                                                                                                                                                                                                                                             /standard_name= "
replace(1489,C)
/*tag= d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /standard name= "
replace(1123,A)
/*tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /standard_name= 'replace(684,G)
/*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers replace(604,G)
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                         standard_name=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antidiabetic; antiasthmatic; cachexia; AIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Single
                                                                                                                                                                                                                                                                                                                                                                                                                                         "Single nucleotide polymorphism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polymorphism'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polymorphism"
```

```
30-APR-2001
02-MAY-2001
03-MAY-2001
16-MAY-2001
16-MAY-2001
16-MAY-2001
16-MAY-2001
11-MAY-2001
11-MAY-2001
11-JUN-2001
11-AUG-2001
01-DEC-2001
01-DEC-2001
01-DEC-2001
01-DEC-2001
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                           (CURA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                          CURAGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001US-287424P.
2001US-28806428P.
2001US-288528P.
2001US-291240P.
2001US-291240P.
2001US-294489P.
2001US-294499P.
2001US-294499P.
2001US-29499P.
2001US-299303P.
2001US-309344P.
2001US-312903P.
2001US-312903P.
2001US-312903P.
2001US-312903P.
2001US-313331P.
2001US-332772P.
2001US-332772P.
2001US-3333184P.
2001US-33337426P.
2001US-333992P.
2001US-3337426P.
2001US-337426P.
                                                                                                                                                                                                                                                                                                                                                                                                                                           CORP.
```

Rastelli L, P.C.
Boldog FL, Li L, Zern.
Vernet CAM, Pena CEA, Bu
I Spaderna SK, Voss EZ, Mr
Miller CE, Taupier RJ,
Mr PF, Zhong M; PD, Smithson Zerhusen BD, Smithson G, Guo X, Gerlach V, Casman SJ usen BD, Tchernev VT, Gangolli EA; Burgess CE, Liu X, Spytek KA, Gorman L; Malyankar UM, Anderson DW, Patturajan M; Padigaru M, Shenoy SG, Kekuda R, Gusev SJ; Ş

WPI; 20 P-PSDB; 2002-732824/79. DB; ABP70142.

New NOVX polypeptides and polynucleotides, useful for preventing, diagnosing or treating NOVX-associated disorders e.g. diabetes, cancer, Alzheimer's disease, dyslipidemias, obesity, immune or hematopoietic and asthma

Claim 16; Page 261-262; 619pp; English.

CC The present invention relates to new isolated proteins (NOVX) and their CC coding sequences (ABV99327-ABV99595 and ABP70049-ABB70149), where X is CC any number from 1 to 48. The NOVX proteins and coding sequences are useful in the manufacture of a medicament for treating a syndrome CC associated with a human disease, preferably a NOVX-associated disorder. CC The NOVX coding sequences and proteins are useful for treating. CC preventing or diagnosing diseases such as metabolic disorders, diabetes, cobsity, infectious disease, anorexia, cancer-associated cachexia, CC cancer, neurodegenerative diseases, Alzheimer's disease, Parkinson's CC disease, immune disorders, haematopoietic disorders, cardiovascular CC disorders, fertility, bronchial asthma, AIDS, dyslipidemia, metabolic disorders, fertility, bronchial asthma, AIDS, dyslipidemia, metabolic disorders associated with obesity, mecabolic syndrome X or wasting CC disorders associated with chronic diseases or various cancers. The NOVX coding sequences and proteins may also be used as targets for the CC identification of small molecules that modulate or inhibit e.g. CC undending and angiogenesis, in gene therapy, in generation of CC antibodies that bind immnospecifically to NOVX substances for use in CC contrologic or disorders is and proteins may also be the control of t therapeutic or diagnostic

SQ

Sequence 3201

BP;

534

A; 1174 C; 986 G; 507 T; 0 other;

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query M.tch
                                                                                                                                                                          AAF15566 to AAF16505 encode the human prostate cancer associated prostate cancer antigens, given in AAB5636 to AAB57302. The prostate cancer antigens can have neuroprotective, cytostatic, cardioactive, immunomodulatory, muscular, vulnerary, gastrointestinal, nephrotropic, antiinfective, gynaecological and antibacterial activities, and can be used in gene therapy. The prostate cancer antigen polynucleotides may be used for detection of prostate cancer, chromosome identification, as chromosome markers, and for numerous other diagnostic
                                                                                                      or research purposes. The prostate cancer antigens may be used to treat disorders such as neural, immune, muscular, reproductive, gastrointestinal, pulmonary, cardiovascular, renal, and proliferative disorders, wounds, and infectious diseases. AAF16506 to AAF16514 to AAB57303 represent sequences used in the exemplification of the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neuroprotective; cytostatic; cardioactive; immunomodulatory; muscular; vulnerary; gastrointestinal; nephrotropic; antiinfective; gynaecological; antibacterial; gene therapy; neural; immune; reproductive; renal; gastrointestinal; pulmonary; cardiovascular; proliferative disorder; wound; infectious disease; ss.
                                                              Sequence
                                                                                                                                                                                                                                                                                                               Claim 1; Page 1079-1080; 2338pp; English.
                                                                                                                                                                                                                                                                                                                                         Prostate cancer associated gene sequences, cancer antigens, useful for treatment, pre disorders such as prostate cancer -
                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-587513/55
P-PSDB; AAB57000.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Rosen CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-MAR-2000; 2000WO-US05988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200055174-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; prostate cancer; prostate cancer antigen; detection; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAF16203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAF16203 standard; cDNA; 3947 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN
(ROSE/) ROSEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1966 CGCTGCCGGCCTCGCC 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J
J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HUMAN GENOME SCI INC
ROSEN C A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCTGCCGGCCTCGCC
                                                                3947
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ruben SM
   30.8%; Score 16; ilarity 100.0%; Pred. No. Conservative 0; Mismatci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                              B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0124270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer
                                                            1067 A; 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antigen nucleotide sequence SEQ ID NO:638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 16; pred. No.
                                                            Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
      Mismatches
                                                            983 G;
                                                                                                                                                                                                                                                                                                                                                         prevention,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
26;
                                 DB 21;
                                                            910 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24;
                                                                                                                                                                                                                                                                                                                                                         referred to vention, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
    0
                                                              8
                                Length 3947;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3201;
                                                            other;
      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                     as prostate
diagnosis of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
   Gaps
   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
RESULT 19
AAH34839/c
                                                                                                                                                                                                                                                                                 the proteins are collectively known as colon cancer antigens. The colon CC cancer antigens have cytostatic activity and can be used in gene CC therapy and vaccine production. N and P may be used in the prevention, CC diagnosis and treatment of diseases associated with inappropriate P CC expression. For example, N and P may be used to treat disorders CC associated with decreased expression by rectifying mutations or deletions CC in a patient's genome that affect the activity of P by expressing CC inactive proteins or to supplement the patients own production of P. CC Additionally, N may be used to produce the colon cancer-associated Ps. CC by inserting the nucleic acids into a host cell and culturing the cell CC by inserting the proteins. N and P can be used in the prevention, diagnosis and treatment of colorectal carcinomas and cancers. AAH37196 to AAH37204 CC and AAB37789 represent sequences used in the exemplification of the CC N.B. Paces 666 for ACO TABABATARA PACES TO THE PA
  밁
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                           Ś
                                                                                         Query Match
Best Local S
Matches 16
                                                                                                                                                                                     Sequence 3953
                                                                                                                                                                                                                              \dot{N}.B. Pages 666 to 682 and page 7053 of the sequence listing were missing at time of publication, meaning no sequences are present SEQ ID NO:1027 to 1052, 7921 and 7922.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 3431-3432; 9803pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acids encoding 4277 human colon cancer-associated polypeptides, useful for preventing, diagnosing and/or treating colorectal cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-SEP-1999;
03-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; colon cancer; colon cancer antigen; diagnosis; detection;
colorectal carcinoma; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human colon cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAH34839;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH34839 standard; cDNA; 3953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-SEP-2000; 2000WO-US26524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-APR-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200122920-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAG75434.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-235357/24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19
  72
                                           19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72
                                                                                              16;
                                                                                                               Similarity
                                             CTCATCGCTCTCGTCG 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCATCGCTCTCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCATCGCTCTCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barash SC,
                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                     8P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0157137.
99US-0163280.
                                                                                                                                                                                  1055 A; 972 C; 986 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antigen encoding cDNA SEQ ID NO:1921
                                                                                                               30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Birse CE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57
                                                                                         <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВP
                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rosen
                                                                                                                 NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                    DB 22;
                                                                                                                                                                                  930 T; 10 other;
                                                                                         ..
                                                                                                                                       Length 3953;
                                                                                         Indels
                                                                                         <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         colon
                                                                                         Gaps
                                                                                                                                                                                                                                                      ę
                                                                                         0
```

RESULT

```
Ś
                                                                                                                RESULT 21
AAS84163/c
                                                                                                                                                       밁
                                                                                                                                                                                           Matches
                                                                                                                                                                                                     Query Match
Best Local
                  Human; chromosome mapping; gene mapping; gene therapy; forensic;
food supplement; medical imaging; diagnostic; genetic disorder;
                                                                                                                                                                                                                                                                                        The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The inventiuseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABLIG176-ABL30511), expressed DNA sequences (ABLIG176-ABL30511), expressed DNA sequences (ABLIG176-ABL30511).
                                                                                                                                                                                                                                                                                                                                                                                               New isolated nucleic a
genes from Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila;
Homo sapiens
                                               DNA encoding novel human diagnostic protein #19967.
                                                                  13-FEB-2002
                                                                                      AAS84163;
                                                                                                       AAS84163 standard; cDNA; 7434
                                                                                                                                                                                                                                                  at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID NO 40961; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pharmaceutical; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster expressed polynucleotide SEQ ID NO 40961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABL15493;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABL15493 standard; cDNA; 6507
                                                                                                                                                                                                                                                           The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200171042-A2
                                                                                                                                                                                                                                                                               sequences (ABL01840
(ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PEKE ) PE CORP NY.
                                                                                                                                                       2990
                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-656860/75.
                                                                                                                                                                         21
                                                                                                                                                                                            16;
                                                                                                                                                                                                     Similarity
                                                                                                                                                      CATCGCTCTCGTCGCT 3005
                                                                                                                                                                   CATCGCTCTCGTCGCT 36
                                                                                                                                                                                                                                  6507 BP; 1745 A; 1888 C; 1712 G; 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               developmental biology;
                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                 (first
                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                 acid
a and
                                                                                                                                                                                                    30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ļį
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PWD,
                                                                                                                                                                                                                                                                                                                                                                                               detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Myers
                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          EW;
                                                                                                                                                                                                     DB
26;
                                                                                                                                                                                                               23;
                                                                                                                                                                                            0
                                                                                                                                                                                                                                  T; 0 other;
                                                                                                                                                                                                              Length 6507;
                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                              The invention ignalling and
                                                                                                                                                                                           0
                                                                                                                                                                                         Gaps
                   88
                                                                                                                                                                                                                                                              WIPO
                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                          0
                                                                                                                                                                        밁
                                                                                                                                                                                       5
```

```
ABL14186/c
ID ABL1411
XX
AC ABL1411
XX
DT 26-MAR
XX
DT 26-MAR
XX
DT DFOSOP
XX
W Drosop
XW Drosop
XW Drosop
XW Dharma
XX
OS Drosop
XX
ON DROSOP
XX
ON DROSOP
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and to produce other types of data and products dependent on DNA and amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention.

Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WII at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polymucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
     WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7434 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-MAR-2000;
23-AUG-2000;
                                                     Drosophila melanogaster
                                                                                                                               Drosophila; developmental biology; cell signalling; insecticide
                                                                                                                                                                                              Drosophila
                                                                                                                                                                                                                                                                                                                                                       ABL14186 standard; cDNA; 15435 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID No 19967; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2228 CTCATCGCTCTCGTCG 2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-639362/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCATCGCTCTCGTCG 34
                                                                                                                                                                                        melanogaster expressed polynucleotide SEQ ID NO 37040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0540217
2000US-0649167
                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Liu C,
                                                                                                         gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1795 A; 2099 C; 1892 G; 1646 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30.0%; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tang
                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 7434;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

```
RESULT 23
AAD52898
                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                   ફ
                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 16; Conserv
                                      exon
                                                                               exon
                                                                                                                                                diagnostic marker; gene; ds.
                                                                                                                                                       Human; tweety homologue 2; TTYH2; therapy; cancer; tumour; cytostatic;
                                                                                                                                                                         Human tweety homologue 2 (TTYH2) gene.
                                                                                                                                                                                          14-MAY-2003
                                                                                                                                                                                                                           AAD52898 standard; DNA; 47999 BP
                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from brosophila. The invent useful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL130511), expressed DNA sequences (ABL16176-ABL30511), (ABB57737-ABB72072).
              intron
                                                      intron
                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                    Sequence 15435 BP; 4735 A; 3331 C; 2995 G; 4374 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; SEQ ID NO 37040; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                            The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-656860/75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                    at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; ABB70083.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (PEKE ) PE CORP NY
                                                                                                                                                                                                                                                                    2140 CGCTCTCATCGCTCTC 2125
                                                                                                                                                                                                                                                                             15 CGCTCTCATCGCTCTC 30
                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adams M,
                                                                                                                                                                                         (first entry)
           /*tag= c
10377..10549
/*tag= d
/number= 2
10550..16622
                                                    /*tag= b
/number= 1
2075..10376
                                                                            , cey= a
/product= "Human TTYH2 protein"
1936..2074
                                                                                                      Location/Qualifiers
1946..45753
                                                                                                                                                                                                                                                                                                            30.8%; Score 16; DB 23; Length 15435; 100.0%; Pred. No. 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PWD,
                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Myers
                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EW;
                                                                                                                                                                                                                                                                                                    ;
                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                      The invention ignalling and
                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                             WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                              18
                                                                                                                                                                                                                                                                                                   0
   WPI; 2003-129264/12.
P-PSDB; AAE34613.
                          Clements
                                                                                                                                                                                       exon
                                                                                                                                                                                                                                                                         exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       exon
                                                                           14-MAY-2002; 2002WO-AU00591
                                                                                            21-NOV-2002.
                                                                                                                                                                                                                                 exon
                                                                                                                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    exon
                                         (UYQU-) UNIV QUEENSLAND TECHNOLOGY
                                                        14-MAY-2001; 2001AU-0004971
                                                                                                           WO200292629-A1
                                                                                                                                                                                                                                                                                                                                                            exon
                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                              exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon
                                                                                                                                                              intror
                                                                                                                                                                                                       intron
                                                                                                                                                                                                                                                                                         intron
                                                                                                                                                                                                                                                                                                                                  intron
                                                                                                                                                                                                                                                                                                                                                                            intron
                                                                                                                                                                                                                                                                                                                                                                                                                     intron
                                                                                                                                                                                                                                                intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                              intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           intron
                                                                                                                                                                                                                                                                                                                                                                                                   /number= 7
35443..35705
/*tag= 0
5706
                                                                                                                                                                                                     /*tag= x
/number= 12
39563..40050
                                                                                                                                                                                                                                                                                       /*tag= t
/number= 10
36685..38529
                                                                                                                                                                                                                                                                                                                        /number= 9
36360..36591
/*tag= 8
                                                                                                                                                                                                                                                                                                                                                                          /*tag= p
/number= 8
35762..36266
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= 1
/number= 6
28976..35372
                                                                                                                                          45673..47158
                                                                                                                                                            40130..45672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /number= 3
16735..23223
                                                                                                                                                                                                                                                38673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28396
                                                                                                                            number= 14
                                                                                                                                                                     /*tag= z
/number= 13
                                                                                                                                                                                       0051
                                                                                                                                                                                                                                                        /*tag= v
/number= 11
                                                                                                                                                                                                                                                                        38530.
                                                                                                                                                                                                                                                                                                                   36592
                                                                                                                                                                                                                                                                                                                                                         *tag= q
6267..36359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mumber= 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28300..28395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23445..28299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6623..16734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          number= 4
                                                                                                                                                                                                                                                                                                                                                   *tag=
                                                                                                                                                                                                                                                                                                                                                                                            *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         *tag=
                                                                                                                                                                                                                                     11
39376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
28902
k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g= g
4..23444
                                                                                                                                                                                                                                                                      ..38672
                                                                                                                                                                                      ..40129
                                                                                                                                                                                                                               ..39562
                                                                                                                                                                                                                                                                                                                 ..36684
                                                                                                                                                                                                                                                                                                                                                                                                                                              ..35442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .28975
                                                                                                                                                                                                                                                                                                                                                  н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
```

```
RESULT 24
ABL15492
ID ABL15
AX ABL15
AX ABL15
XX Drosc
XX Colai
XX Upit
DR P-PS
XX New
PT gene
PT inte
XX PT gene
PT inte
XX Clai
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X444X4X3030303030XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New human producing the polype
                     The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL10176-ABL30511), expressed DNA sequences (ABL101840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to human tweety homologue 2 (TTYH2) polypeptide and polynucleotide sequence. TTYH2 is useful for producing an antigen-binding molecule that is immuno-interactive with the polypeptide. The agent is useful for manufacturing a medicament for restoring a normal level and/or functional activity of TTYH2 expression in a patient, and for treating or preventing cancer or tumour. TTYH2 sequences may also be used to provide both drug targets and regulators to promote or inhibit one or more activities, and to provide diagnostic markers for cancers. The present sequence is human TTYH2 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                    New isolated nucleic a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pharmaceutical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 47999
                                                                                                                                                                                                                                                                                 interactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (PEKE )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABL15492 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human tweety homolog 2 polypeptides and polynucleotides, useful ducing an antigen-binding molecule that is immuno-interactive wipolypeptide or as diagnostic markers for cancers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15
                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                               OBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCTCTCATCGCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTCTCATCGCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 128-156; 176pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  melanogaster expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               developmental biology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first
                                                                                                                                                                                                                               ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP; 11178 A; 12727 C; 12874 G; 11209
                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                                                      acid
a and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ľ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59967
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30
                                                                                                                                                                                                                            21pp +
                                                                                                                                                                                                                                                                                                 detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polynucleotide SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
25;
                                                                                                                                                                                                                         Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 47999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŧ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
ABQ818 ABQ818 AC ABQ818 AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
The present invention describes a polynucleotide (I) comprising a CC sequence of a Bifidobacterium genome selected from the nucleotide CC sequences given in ABQ81842 and ABQ81843, or a sequence exhibiting at CC least 90% identity or which hybridises with the sequences given in CC ABQ81842 and ABQ81843. Also described is a polynucleotide (II) encoding CC a fusion protein, comprising a sequence selected from 1097 sequences given in ABB65258 to ABP66354 ligated in frame to a polynucleotide concoding a heterologous polypeptide. (I) has antidiarrheic and contibacterial activities, and can be used as an inhibitor of Salmonella. (I) (which is a probe) is useful for the detection and/or identification of Bifidobacterium longum in a biological sample. A carrier containing CC can be used for preventing and/or treating diarrhoea brought about by pathogenic bacteria and/or rotavirus. The carrier is a food composition selected from milk, yogurt, curd, cheese, fermented milks, milk based fermented products, idearcreams, fermented cereal based products, milk based ferment, infant formula, pet food or a pharmaceutical composition selected from tablets, liquid bacterial suspensions, dried oral supplement, wet oral supplement, dry tube feeding or wet tube feeding. (I) is useful in DNA arrays or chips to carry out analysis of the C expression of the Bifidobacterium gene. ABQ81844 to ABQ81850 represent CC Bifidobacterium related nucleotide sequences given in the Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as a probe
longum in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel polynucleotide comprising Bifidobacterium genome sequence useful as a probe or primer for detecting and/or identifying Bifidobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antidiarrheic; antibacterial; inhibitor of Salmone
identification; lactic acid bacterium; diarrhoea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 59967 BP; 17305 A; 12463 C; 12291 G; 17908 T; 0 other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID 1100; 80pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-668397/72.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bifidobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bifidobacterium longum NCC2705; Bifidobacterium; bacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bifidobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABQ81844 standard; DNA; 349980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-JAN-2001; 2001EP-0102050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (NEST )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4640 CATCGCTCTCGTCGCT 4655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCGCTCTCGTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           food
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          biological sample
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001EP-0102050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          longum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        composition;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          longum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCC2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             related nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Salmonella;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ID:1100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
ព្រះព្រះន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
CC The present sequence describes a purified corn tassel-derived CC polynucleotide sequence (cdps) comprising a nucleic acid sequence CC selected from those given in ABL70627 to ABL70633. The cdps sequences CC selected from those given in ABL70627 to ABL70633. The cdps sequences (I) CC can be used for determining altered gene expression, to recover CC regulatory elements and to follow inheritance of desirable characteristics through hybrid breeding programs. (I) are also useful in the evaluation, and alteration of desired characteristics associated CC with growth and development, disease resistance, environmental CC adaptability, quality and yield, and as molecular markers for studying inheritance of multigene traits in a plant breeding program. (I) can be cranscript image, to clone regulatory elements for use in transformation vectors, to express a polypeptide, to identify, isolate or extend CC vectors, to express a polypeptide, to identify, isolate or retend CC identical or related corn tassel nucleic acid sequences from DNA CC libraries, in nucleic acid hybridisation or amplification technologies,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                               Novel purified corn tassel-derived polynucleotide useful for determining altered gene expression, to recover regulatory elements to follow inheritance of desirable characteristics through hybrid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N.B. The sequence data for this patent specification but is based on sequence
                                                                                                                                                                                                                                                                          Claim 1; SEQ ID 4207;
                                                                                                                                                                                                                                                                                                                                                                                                               Lalgudi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (LALG/)
                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-163647/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US2001051335-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   environmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Corn; corn tassel-derived polynucleotide; cdps; hybrid breeding; CDPs;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Corn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABL74833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABL74833 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 349980 BP; 69975 A; 105045 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               European Patent Office.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Listing
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SHER/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inheritance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         253393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tassel-derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               LALGUDI R V.
                                                                                                                                                                                                                                                                                                                                                                                                                   R۷,
                                                                                                                                                                                                                                                                                                                                                                                                                                                SHERMAN B K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from the present invention but not mentioned further within the
                                                                                                                                                                                                                                                                                                     programs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATCGCTCTCGTCGC 253378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCATCGCTCTCGTCGC 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   trait;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                 Ito LY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                characteristic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 characteristic; growth; development; disease res
  adaptability; quality; yield; molecular marker;
it; plant breeding; corn tassel; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-082567P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0294093.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polynucleotide (cdps)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                      201pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                 Sherman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98
                                                                                                                                                                                                                                                                                                                                                                                                                 BK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                104394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is not represented in the printed information supplied by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO: 4207.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 349980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70566 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                disease resistance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT 27
ABX33704/c
ID ABX337
         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
The invention relates to a composition comprising a human GDP-mannose 4,6-dehydratase (GM4,6D) peptide. The peptide is useful for identifying GM4,6D inhibitors. GM4,6D inhibitors are useful for reducing inflammation in a mammalian subject and for treating or ameliorating diseases affected by the level of cellular fucosylation or diseases affected by the fucosylation of glycoconjugates. These diseases include arthritis, transplant rejection, asthma, sepsis, reperfusion injury, stroke or infection. The GM4,6D peptide or a polynucleotide encoding it is also useful for manufacturing complex carbohydrates and as targets for screening small molecule antagonists of the activity of the enzyme. The polynucleotide is useful in developing an assay for defects in the enzyme, as well as in gene replacement therapy. Sequences ABX17942-ABX17944 and ABX17947-ABX33716 represent DNA molecules encoding human GM4,6D peptides of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-NOV-1996;
03-DEC-1997;
09-SEP-1998;
                                                                                                                                                                                                                                                                                    New composition comprising GDP-mannose 4,6-dehydratase (GM4,6D) peptide, for manufacturing complex carbohydrates, or as targets for screening GM4,6D antagonists for treating e.g. arthritis, or transplant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cellular fucosylation; glycoconjugate fucosylation; transplant rejarthritis; asthma; sepsis; reperfusion injur; stroke; infection; complex carbohydrate; gene replacement therapy; immunosuppressive; antiinflammatory; antiarthritic; antibacterial; cerebroprotective;
                                                                                                                                                                                                                                              Disclosure;
                                                                                                                                                                                                                                                                                                                                                       WPI; 2003-066673/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-JUN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antiasthmatic; vasotropic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABX33704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as query sequences to determine homology of known sequences, as probe for use in Southern or Northern hybridisation, and to identify the presence of and/or to determine the degree of similarity between two (or more) nucleic acid sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                      (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-AUG-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; GDP-mannose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human GDP-mannose 4,6-dehydratase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGCAGTTCTCTCAC 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                      Ψ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGCAGTTCTCTCAC 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            214 BP; 68 A;
                                                                                                                                                                                                                                           SEQ ID NO 15763; 6pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                      Kriz R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001US-0878574.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96US-0753233.
97US-0984246.
98US-0149674.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0333177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4,6-dehydratase; GM4,6D; gene; ss; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.8%;
                                                                                                                                                                                                                                                                                                                                                                                      Kumar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31 C;
                                                                                                                                                                                                                                                                                                                                                                                      ᄍ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 15;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GM4,6D)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
80
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 T; 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA #15761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immunosuppressive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT 28
ABZ17641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSSSS
                                                                                                           $\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chince{\chin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 15
     Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                         ABQ17575 to ABQ20506 represent isolated polynucleotide (I) sequences, ABP54446 to ABP54472 represent protein (II) sequences, from the present invention. (I) and (II) have cytostatic activity and can be used in getherapy and vaccines. (I), (II), antibodies and compositions from the present invention are useful for diagnosing, preventing and treating cancer, which expresses CT or CP mRNA antigens. They are useful for stimulating immune response. They can also be useful in virology, immune response. They can also be useful in virology, microbiology, molecular biology and recombinant DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format directly from USPTO at seqdata.uspto.gov/sequence.html.
                                                                                                           Sequence 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; cancer; tumour; therapy; diagnosis; CT antigen; CP antigen; immune response; virology; immunology; microbiology; molecular biology; recombinant DNA technology; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S2 subtraction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 264 BP;
                                                                                                                                                               techniques.

N.B. The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New immunogenic polynucleotides or polypeptides useful for diagnosing, preventing and treating cancer expressing CT or CP mRNA antigens, and in virology, immunology, microbiology, molecular biology and recombinant DNA techniques
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAR-2001; 2001US-280255P.
28-AUG-2001; 2001US-315563P.
09-JAN-2002; 2002US-347313P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABZ17641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABZ17641 standard; cDNA; 335 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; SEQ ID 67; 207pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-058387/05.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-2002; 2002WO-US10421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-CCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200278516-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CORI-)
                              Local Similarity
                                                                                                                                                         ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORIXA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                crerecrecerece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCTCGTCGCTGCCG
        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                           вP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bangur
                                                                                                        A; 96 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; 64 C;
                           28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
     0; Mismatches
                              Score 15;
Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71 G; 63 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 15;
Pred. No.
                                                                                                        96 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaiger A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        related clone SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                        66 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95 ;
                              DB
94;
                                                    25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25;
     <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>,</u>
                                                    Length 335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 264
     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NO:67
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                         present
                                                                                                                                                                                                                                                                                                                                                                                             gene
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
RESULT 29
ABX19200/c
                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                             4,6-dehydratase (GM4,6D) peptide. The peptide is useful for identifying GM4,6D inhibitors. GM4,6D inhibitors are useful for reducing inflammation in a mammalian subject and for treating or ameliorating diseases affected by the level of cellular fucosylation or diseases affected by the fucosylation of glycoconjugates. These diseases include arthritis, fucosylation of glycoconjugates. These diseases include arthritis, fucosylation, asthma, sepsis, reperfusion injury, stroke or infection. The GM4,6D peptide or a polynucleotide encoding it is also useful for manufacturing complex carbohydrates and as targets for screening small molecule antagonists of the activity of the enzyme. The polynucleotide is useful in developing an assay for defects in the enzyme, as well as in gene replacement therapy. Sequences cenzyme, as well as in gene replacement therapy. Sequences human GM4,6D peptides of the invention.

Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format directly from USPTO
Best Loc
Matches
                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-NOV-1996;
03-DEC-1997;
09-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          New composition comprising GDP-mannose 4,6-dehydratase (GM4,6D) peptide, for manufacturing complex carbohydrates, or as targets for screening GM4,6D antagonists for treating e.g. arthritis, or transplant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cellular fucosylation; glycoconjugate fucosylation; transplant rejurchititis; asthma; sepsis; reperfusion injury; stroke; infection; complex carbohydrate; gene replacement therapy; immunosuppressive; antiinflammatory; antiarthritic; antibacterial; cerebroprotective;
                                                                   Sequence 336 BP; 115 A; 49 C; 80 G;
                                                                                                                                                                                                                                                                                                                                                       The invention relates to a composition comprising a human 4,6-dehydratase (GM4,6D) peptide. The peptide is useful for
                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 1259; 6pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2003-066673/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-JUN-2001; 2001US-0878574.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2002110548-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antiasthmatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABX19200 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GEMY ) GENETICS INST INC.
                                                                                                   seqdata.uspto.gov/sequence.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GDP-mannose 4,6-dehydratase (GM4,6D)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GDP-mannose 4,6-dehydratase; GM4,6D;
                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ,
T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCTCATCGCTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96US-0753233.
97US-0984246.
98US-0149674.
99US-0333177.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vasotropic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA;
                 100.0%;
                                   28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31
              Score 15;
Pred. No.
                                                                   92 T; 0 other;
                 DB 25;
94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA #1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene; ss;
                              Length 336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inflammation;
                                                                                                                                                                                                                                                                                                                                                                           GDP-mannose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rejection;
```

S

15;

Conservative

0

Mismatches

0

٥,

Gaps

```
밁
          11-JUL-2000;

11-JUL-2000;

26-JUL-2000;

26-JUL-2000;

14-AUG-2000;

15-AUG-2000;

16-AUG-2000;

17-AUG-2000;

18-AUG-2000;

18-AUG-2000;

19-AUG-2000;

19-AUG-2000;

19-AUG-2000;

11-AUG-2000;

11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-APR-2000;
19-MAY-2000;
07-JUN-2000;
28-JUN-2000;
30-JUN-2000;
07-JUL-2000;
07-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; secreted extracellular matrix protein; ss; immunomodulatory; Anti-HIV; antianemic; antirheumatic; antisclerotic; cardiant; vascular; cerebroprotective; thrombolytic; antinicrobial; ophthalmic; cytostatic; antialzheimers; immune/autoimmune disease; HIV infection; anaemia; human immunodeficiency virus; rheumatoid arthritis; multiple sclerosis; cancers; hyperproliferative disorder; breast neoplasm; melanoma; Sezary syndrome; Gaucher's disease; neurological diseases; Alzheimer's disease; Parkinson's disease; cardiovascular disorder; cardiac arrest; tachycardia; angina; infection; corneal infections; wound healing; immunogen; gene therapy; antisense; food additive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS31315 standard; cDNA; 357 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCTCACGCTCTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 encoding
        2000US-0186350
2000US-019874
2000US-0199874
2000US-0199874
2000US-02094515
2000US-0214886
2000US-0216880
2000US-0217487
2000US-0217487
2000US-0217487
2000US-0217487
2000US-0218290
2000US-0224518
2000US-0224518
2000US-0225568
2000US-02252575
2000US-0225268
2000US-02252779
2000US-0225779
2000US-0225779
2000US-0225779
2000US-0225778
2000US-0225779
2000US-0225778
2000US-0225779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-US01348.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0184664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -0180628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 extracellular matrix protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    129
     05-SEP-2000
06-SEP-2000
06-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
08-SEP-2000
14-SEP-2000
14-SEP-2000
14-SEP-2000
14-SEP-2000
14-SEP-2000
14-SEP-2000
14-SEP-2000
25-SEP-2000
25-SEP-2000
25-SEP-2000
26-SEP-2000
27-SEP-2000
27-SEP-2000
28-SEP-2000
29-SEP-2000
29-SEP-2000
29-SEP-2000
29-SEP-2000
29-SEP-2000
29-SEP-2000
20-OCT-2000
20-OCT
2000US-0229509
2000US-0239539
2000US-0231241
2000US-0231241
2000US-0231241
2000US-0231241
2000US-0231261
2000US-0241786
2000US-0241786
2000US-0241786
2000US-0246477
2000US-0246477
2000US-0246477
2000US-0246477
2000US-0246611
2000US-0246611
2000US-0246611
2000US-0249211
```

```
RESULT 31
ABK43452
ID ABK43
                                                                                                    밁
                                                                                                                                  S
                                                                                                                                                                                                                                                         The invention relates to isolated nucleic acid molecules encoding convel human secreted extracellular matrix proteins (SPs). The polynucleotides and proteins are used to prevent, treat a medical condition in e.g. humans, mice, rabbits, goats, horses, cats, dogs, chickens or sheep. For example, disorders associated with decreased concidency or sheep. For example, disorders associated with decreased concidency of SPs. The SP polynucleotide or a vector expressing them may be administered to treat diseases by gene therapy. Antisense molecules commany be administered to down regulate expression of SPs by binding with the cells own genes and preventing their expression. The polynucleotides may be used as DNA probes in diagnostic assays. The SPs may also be used as antigens to produce antibodies and to identify modulators (agonists may also be used to down regulate expression and activity of SP and as diagnostic agents for detecting the presence of SPs in samples. The disorders include for example: immune/autoimmune diseases (e.g. HIV (human immunodeficiency virus) infections, anaemia, rheumatoid arthritis and multiple sclerosis), cancers and hyperproliferative disorders (e.g. cardiac/cerebrovascular disorders (e.g. cardiac/cerebrovascular disorders (e.g. cardiac/cardia-disease) (e.g. Alzheimer's disease, paurological disease). Alzheimer's disease, cardiac/cerebrovascular disorders (e.g. cardiac/cardia-disorders (e.g. cardia-disorders 
                                                                                                                                                                         Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-NOV-2000
17-NOV-2000
17-NOV-2000
17-NOV-2000
01-DEC-2000
01-DEC-2000
05-DEC-2000
05-DEC-2000
05-DEC-2000
06-DEC-2000
06-DEC-2000
08-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-
17-
17-
17-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acid molecules encoding human secreted extracellular matrix proteins, used in preventing, treating or ameliorating a disorder, allzheimer's and Parkinson's diseases and cancers -
ABK43452 standard; cDNA; 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001-465572/50.
DB; AAU19744.
                                                                                                 102
                                                                                                                                                                         l Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ
                                                                                             ATGCAGTTCTCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0249216

2000US-0249217

2000US-0249244

2000US-0249245

2000US-0249245

2000US-0249265

2000US-0249297

2000US-0249297

2000US-0249299

2000US-0249299

2000US-0250160

2000US-0250160

2000US-0250160

2000US-0251030

2000US-0251198

2000US-0251198

2000US-02511868

2000US-02511868

2000US-02511869

2000US-02511989

2000US-02511989

2000US-02511989

2000US-02511989

2000US-02511989

2000US-02511989
                                                                                                                                                                       28.8%; Score 15; llarity 100.0%; Pred. No Conservative 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ID No 129; 577pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ruben SM;
                                                                                                                                      15
  ВР
                                                                                                                                                                             Mismatches
                                                                                                                                                                                             No.
                                                                                                                                                                                           DB 94;
                                                                                                                                                                                                            22; Length 357;
                                                                                                                                                                           0,
                                                                                                                                                                         0
                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e.g.
                                                                                                                                                                       0
```

```
31-JAN-2000
24-FEB-2000
24-FEB-2000
24-FEB-2000
16-MAR-2000
11-MAR-2000
17-MAR-2000
28-JUN-2000
28-JUN-2000
27-JUL-2000
27-JUL-2000
26-JUL-2000
14-JUL-2000
14-JUL-2000
14-AUG-2000
15-AUG-2000
16-AUG-2000
17-AUG-2000
17-AUG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hyperproliferative disorder; neoplasm; cardiovascular disorder; cardiac arrest; cerebrovascular disorder; ischaemia; angiogenesis; nervous system disorder; Alzheimer's disease; AIDS; ocular disorder; acquired immunodeficiency virus; dysphagia; gastrointestinal disorder; adenocarcinoma; reproductive system disorder; testicular feminisation; endocrine disorder; diabetes; cancer; leavascularisation; respiratory disorder; mound disorder; kidney failure; blood disorder; myocardial infarction; wound healing; cell proliferation; skin aging;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200155318-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Central nervous system; CNS; autoimmune disease; rheumatoid arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABK43452;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding novel central nervous system protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                additive;
2000US-0217496

2000US-0217496

2000US-022964

2000US-0224518

2000US-0225214

2000US-0225214

2000US-022526

2000US-022526

2000US-022526

2000US-022527

2000US-022547

2000US-022547

2000US-022547

2000US-022548

2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0184664.

2000US-0186350.

2000US-0189874.

2000US-0199076.

2000US-0198123.

2000US-0209467.

2000US-0209467.

2000US-0214886.

2000US-0216813.

2000US-0216843.

2000US-0216848.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-0179065
2000US-0180628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-US01332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             food preservative; gene therapy; gene; ss.
```

```
20-OCT-2000

20-OCT-2000

20-OCT-2000

20-OCT-2000

01-NOV-2000

08-NOV-2000

08-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                     02-OCT-2000;
02-OCT-2000;
13-OCT-2000;
13-OCT-2000;
20-OCT-2000;
20-OCT-2000;
20-OCT-2000;
20-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-SEP-2000;
26-SEP-2000;
26-SEP-2000;
27-SEP-2000;
27-SEP-2000;
29-SEP-2000;
                                                                                                             17-NOV-2000;
17-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0233063.
2000US-0233064.
2000US-0233065.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0232399.
2000US-0232400.
2000US-0232401.
                                                                                                                                                                                                                                                                                                                          2000US-0246474
                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0239935
2000US-0239937
                                     2000US-0249217
2000US-0249218
                                                                                                             2000US-0249210
2000US-0249211
                                                                                                                                  2000US
                                                                                                                                            2000US-0249208
                                                                                                                                                                2000US-0246611
2000US-0246613
                                                                                                                                                                                      2000US-0246610
                                                                                                                                                                                                          2000US-0246528
2000US-0246532
                                                                                                                                                                                                                                2000US-0246527
                                                                                                                                                                                                                                                   2000US-0246525
                                                                                                                                                                                                                                                                        2000US-0246523
                                                                                                                                                                                                                                                                                           2000US-0246477
                                                                                                                                                                                                                                                                                                                                                          2000US-0241809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-0236802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-0236370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0236327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0235484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0234998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-0234997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0234223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0232398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-0231413
                                                                                                                                                                                               -0246609
```

RESULT 32
ABQ66639
ID ABQ66
XX
AC ABQ66
XX
DT 23-AU
XX
DE Human

ABQ66639

standard; cDNA; 357

ВP

23-AUG-2002

(first entry)

Human polynucleotide SEQ ID NO 129

문 S

102

Ardcadrrcrcrcac 116

ATGCAGTTCTCTCAC 15

0 Gaps

0

```
The invention describes an isolated nucleic acid molecule (I) encoding a convel central nervous system protein. (I) and polypeptides (III) encoded by (I), are used to treat a medical conditions and in diagnosis of a condition. Disorders which are diagnosed or treated include atthicting and in diagnosis of a continuous diseases e.g. rheumatoid arthritis, hyperproliferative continuous diseases of the breast or liver, cardiovascular disorders c.g. cardiac arrest, cerebrovascular disorders e.g. cerebral ischaemia, cardiovascular disorders e.g. cerebral ischaemia, cangiogenesis, nervous system disorders e.g. Alzheimer's disease and cangiogenesis, nervous system disorders e.g. cerebral ischaemia, cangiogenesis, nervous system disorders e.g. Alzheimer's disease and cangiogenesis, nervous system disorders e.g. dysphagia, viruses e.g. corneal infection, gastrointestinal disorders e.g. dysphagia, cadenocarcinomas and irritable bowel syndrome, reproductive system conditional disorders e.g. dysphagia, candidatorial disorders e.g. dysphagia, candidatorial disorders e.g. dysphagia, conditional disorders e.g. dysphagia, conditional
       Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-NOV-2000;
17-NOV-2000;
17-NOV-2000;
01-DEC-2000;
01-DEC-2000;
05-DEC-2000;
05-DEC-2000;
05-DEC-2000;
06-DEC-2000;
08-DEC-2000;
08-DEC-2000;
08-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated nucleic acid encoding a protein for diagnosing, preventing, treating or ameliorating medical conditions and used food additives or preservatives -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID No 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-581633/65.
P-PSDB; AAU87122.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HUMA-) HUMAN GENOME SCI INC
       1 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Barash SC,
28.8%; Score 15; DB ilarity 100.0%; Pred. No. 94 Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; 2000US-0251479.
; 2000US-0251856.
; 2000US-0251868.
; 2000US-0251869.
; 2000US-0251989.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-0251990.
2000US-0254097.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001US-0259678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-0251988.
2000US-0256719.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-0251030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-0250391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0250160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-0249299
2000US-0249300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-0249297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             837pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SM
                       DB 23; Length 357;
94;
  0
```

as

```
26-JUL-2000;
26-JUL-2000;
114-AUG-2000;
115-SEP-2000;
115-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             antiparkinsonian; antisickling; antianaemic; antiarthritic; cancer, antitheumatic; hepatotropic; cerebroprotective; antiinflammatory; antiallergic; antidiabetic; antulcer; anticonvulsant; antifungal; antiparasitic; cardiant; immune disorder; cardiovascular disorder; neurological disease; infection; nephrotropic; gene therapy; vaccin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; nootropic; neuroprotective; cytostatic; dermatological; virucide; immunosuppressive; antiinflammatory; anti-HIV; antibacterial; vulnerary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-JAN-2000;
04-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neurological
gene; ss.
        Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-APR-2002
        CA,
                                    RUBEN S M
BARASH S
        Ruben SM,
                                                                                                                      2000US-249299P.
2000US-251856P.
2000US-251868P.
                                                                                                                                                                     2000US - 214886P

2000US - 216880P

2000US - 217487P

2000US - 217487P

2000US - 217496P

2000US - 224518P

2000US - 225567P

2000US - 2255757P

2000US - 225757P

2000US - 225779P

2000US - 225779P

2000US - 225779P

2000US - 225779P

2000US - 237779P

2000US - 23678P

2000US - 23679P

2000US - 237039P

2000US - 237039P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-179065P
2000US-180628P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001US-0764870
                                                      3 ≥
        Barash
        SC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               therapy; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 33
AAS76408/c
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI;
 New isolated diagnostics,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB;
                                                WPI; 2001-639362/73
P-PSDB; ABG12221.
                                                                                                                                                                    31-MAR-2000;
23-AUG-2000;
                                                                                                                                                                                                                    30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                       Human;
                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding novel human diagnostic protein #12212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS76408
                                                                                                                                                                                                                                                       11-OCT-2001.
                                                                                                                                                                                                                                                                                       WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                         13-FEB-2002
                                                                                                                                    (HYSE-)
                                                                                                                                                                                                                                                                                                                                                      supplement;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USPTO
                                                                                                                                                                                                                                                                                                                                                  chromosome mapping; gene mapping; gene
upplement; medical imaging; diagnostic;
                                                                                                                                    HYSEQ
                                                                                                   RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard; cDNA; 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGCAGTTCTCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCAGTTCTCTCAC
                                                                                                 Liu
                                                                                                                                                                    2000US-0540217.
2000US-0649167.
polynucleotide and encoded polypeptides, forensics, gene mapping, identification of
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
```

0

ВР

genetic o

disorder; ss forensic;

INC. ú

Tang

ĭ

Ģ useful

mutations

```
The invention relates to novel genes (ABQ66521-ABQ66785) and proteins (ABQ466-ABP48110) useful for preventing, treating or ameliorating medical conditions e.g. by protein or gene therapy. The genes are isolated from a range of human tissues disclosed in the specification. The nucleic acids, proteins, antibodies and (ant) agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast and ovarian cancer and other cancers of the adrenal gland, bone, bone marrow, breast, gastrointestinal tract, liver, lung, or urogenital; (b) immune discorders e.g. Addison's disease, allergies, autoimmune chaseles, condities, (c) cardiovascular disorders such as myocardial ischaemias; (d) wound healing; (e) neurological diseases e.g. cerebral anoxia and epilepsy; and (f) infectious diseases such as viral, bacterial, fungal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New nucleic acid encoding human proteins, useful for diagnosis, treatment and prevention of e.g. osteoporosis, also related polypeptides and antibodies -
                                                                                                                                                                                                                                                                           epilepsy; and (f) infectious diseases such as viral, bacterial, funga-
and parasitic infections.

Note: The sequence data for this patent did not form part of the
printed specification, but was obtained in electronic format directly
                                                                                                                                                                                    Sequence 357 BP; 104 A; 68 C; 86 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 129; 235pp +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002-470713/50.
)B; ABP47964.
                                                             l Similarity 100
                                                                                                                                                                                                                                              at seqdata.uspto.gov/sequence.html?DocID=999909764870
                                                28.8%; Sc.
100.0%; Pr
15
                                                                                             Score 1
                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence Listing;
                                                                                             . No.
                                                                                                                                                                                    93 T; 6 other;
                                                                                          DB
94;
                                                                                                                          24;
                                                             0; Indels
                                                                                                                    Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                             <u>.</u>.
                                                          Gaps
```

```
RESULT 34
AAZ19396/c
ID AAZ19396;
XX AAZ19396;
AC AAZ19396;
XX DE M. tuberculosis antig
XX Mycobacterium tubercu
KW immunotherapy; diagno
KW immune response; skii
XX
OS Mycobacterium tubercu
XX
OS M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome C and gene mapping, and in recombinant production of (II). The CC polymucleotides are also used in diagnostics as expressed sequence tags CC for identifying expressed genes. (I) is useful in gene therapy techniques CC (II) is useful in gene therapy techniques (CC or restore normal activity of (II) or to treat disease states involving CC (II). (II) is useful for generating antibodies against it, detecting or CC quantitating a polypeptide in tissue, as molecular weight markers and as CC a food supplement. (II) and its binding partners are useful in medical CC imaging of sites expressing (II). (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. CC diagnostics, forensics, gene mapping, identification of mutations in CC diagnostics, forensics, gene mapping, identification of mutations CC responsible for genetic disorders or other traits to assess biodiversity amino acid sequences. AAS64197-AAS94564 represent novel human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diagnostic coding sequences of the invention.

Note: The sequence data for this patent did not appear in the specification, but was obtained in electronic format directly
New antigens from Mycobacterium tuberculosis useful in diagnostic skin tests and protective or therapeutic vaccines or compositions
                                                                                                                   WPI; 1999-527409/44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mycobacterium tuberculosis; M. tuberculosis; antigen; immunogen; immunotherapy; diagnosis; immunisation; vaccine; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M. tuberculosis antigen 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 416 BP; 74 A; 118 C; 128 G; 96 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID No 12212; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           responsible biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immune response; skin test;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 invention relates to isolated polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCATCGCTCTCGTC 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCATCGCTCTCGTC 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (II) sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                  CORP
                                                                                                                                                                                                                                                                                                                        98US-0072967.
98US-0025197.
                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US03268
                                                                                                                                                                       Dillon DC,
SG, Skeiky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA; 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      disorders or other traits and to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LSER-5 cDNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88.
                                                                                                                                                                             YAW, Twardzik DR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 23; Length 416; 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as hybridisation probes,
                                                                                                                                                                             Houghton R;
R, Vedvick TS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
RESULT 35
AAZ19184/c
ID AAZ191
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                    This invention describes novel recombinant antigens and their encoding nucleic acids derived from Mycobacterium tuberculosis. The novel polypeptides are useful for detecting in tuberculosis infection in a biological sample by detecting antibodies which bind with the polypeptides, and are useful as vaccines for immunizing against M. tuberculosis infection. The new detection methods are needed as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes polypeptides comprising an immunogenic part of a Mycobacterium tuberculosis antigen (Ag). Also described are vaccines and fusion protein containing M. tuberculosis Ag's.

M. tuberculosis Ag's, DNAs encoding them, derived fusion proteins and other polypeptides fragments, can be used in pharmaceutical compositions or vaccines to generate a protective or therapeutic immune response to M. tuberculosis and as reagents in skin tests for diagnosis of tuberculosis. Ag can induce proliferation of, or cytokine secretion by, T, B or natural killer cells and/or macrophages in tuberculosis-immune subjects. AAZ19249 to AAZ19460 and AAY39083 to
 Sequence
                                                                                                                                                                                                                                                                                              05-MAY-1998;
18-FEB-1998;
                                                                                                                                Claim 11a; Page 274; 323pp; English.
                                                                                                                                                          New polypeptide comprising antigenic portions
                                                                                                                                                                                       WPI; 1999-527416/44.
P-PSDB; AAY39058.
                                                                                                                                                                                                                                                                                                                                                                                                                     Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M. tuberculosis recombinant antigen cDNA encoding 5' LSER-5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                         Campos-Neto A,
                                                                                                                                                                                                                                                                                                                                       17-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                 26-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                            WO9942118-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                               vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAZ19184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ19184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY39225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 11; Page 229; 299pp; English
                                                                                                                                                                                                                                                                     (CORI-) CORIXA CORP.
                                                                                                                                                                                                                           Ľ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
                             vaccination
    423
                                                                                                                                                                                                                                                                                                                                                                                                                                              immunity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard; cDNA; 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             423 BP; 95 A; 128 C; 129 G; 71 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          diagnosis; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTCGCTGCCGGCCT 12
                                                                                                                                                                                                                              Reed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
    ₿Þ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                   tuberculosis
                                                                                                                                                                                                                                                                                                98US-0072596
98US-0024753
                                                                                                                                                                                                                                                                                                                                       99WO-US03265
                                                                                                                                                                                                                           Dillon DC,
SG, Skeiky
95 A; 128
                                                                                                                                                                                                                                                                                                                                                                                                                                               88.
                           strategies do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28.8%;
  C; 129
                                                                                                                                                                                                                             Hendrickson RC,
YAW, Twardzik
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
 <u>ი</u>
                           not
71 T;
                          provide 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . DB
94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         antibody;
0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20; Length 423;
                                                                                                                                                                                                                             DR,
                                                                                                                                                                                                                           Houghton R;
R, Vedvick TS;
                                                                                                                                                          of M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                           tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                          immunisation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

Query Match

8

Score 15;

DB

20;

Length 423;

Ş 밁

```
RESULT 30
ABQ62561
           RESULT 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
Matches 15; Conser
                                                                                                                                                        Matches
                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                         The present invention describes a method for isolating a polynucleotide of interest that is present or is expressed in a genome of a first mycobacterium strain and that is absent or altered in a genome of a second mycobacterium strain, which is different from the first strain using a bacterial artificial chromosome (BAC) vector. Recombinant BAC vectors, which are preferably immobilised, can be used to detect mycobacterial nucleic acids (genomic DNA, cDNA or mRNA) in biological samples. The polynucleotides identified are useful as probes or primers for detecting a given mycobacterium of interest. By aligning the polynucleotides contained in the recombinant BAC vectors it is possible to physically map a polynucleotide of mycobacterial origin in a biological sample. The methods and vectors from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing information from the present invention as useful in providing in the present invention and the p
                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                            are useful in providing information for combating tuberculosis. It is possible to compare genomes between different strains or species and their non-pathogenic strains or species counterparts. ABG6492 to ABB81230 represent sequences used in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cole
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABQ62561 standard; DNA; 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 23; Page 44-45; 161pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Isolation of detection of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9954487-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-AUG-2002
                                                                                                                                                                                                                                                                                       exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (INSP ) INST PASTEUR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000-013262/01.
                                                                        352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26
                                                                                                                 7
                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTCGCTGCCGGCCT
                                                                                                    TTCTCTCACGCTCTC 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Buchrieser-Brosch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTCGCTGCCGGCCT
                                                                        TTCTCTCACGCTCTC 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            polynucleotides from mycobacterial genomes, useful for \mbox{\sc Mycobacteria} and for combating tuberculosis -
                                                                                                                                                                                                                                                BP; 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tuberculosis; Mycobacterium bovis; mycobacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tuberculosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vector; bacterial artificial chromosome; tuberculosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0060756.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-IB00740
                                                                                                                                                                                                                                              A; 141 C; 133 G; 102 T; 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ,₩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                            0;
                                                                                                                                                                                 Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gordon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vector clone Rv129SP6
                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                               DB 21; Length 448; 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Billault
                                                                                                                                                            o
-:
                                                                                                                                                                                                                                            other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                  BXGXEXE
                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                               RESULT 38
                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, hammanomodulatory activity and activity, infundable activity and may be useful in the diagnosis and/or activity, indicated activity and may be useful in the diagnosis and/or activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; cytokine; cell proliferation; cell differentiation; vaccine; peptide therapy; stem cell growth factor; haemato tissue growth factor; immunomodulatory; cancer; leukaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Isolated nucleic acids and polypeptides, useful for preventing diagnosing and treating e.g. leukaemia, inflammation and immundisorders -
    Human secreted
                                               06-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                      specification, but was obtained in electroni
at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to human polynucleotides (AAI79941-AAI93841) and the encoded proteins (AAO00010-AAO13910) that exhibit activity elating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 10333; 1399pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang YT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-FEB-2000; 2000US-0515126
18-MAY-2000; 2000US-0577409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-FEB-2001; 2001WO-US04927.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA190273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAI90273 standard; cDNA; 459
                                                                                          AAC02001;
                                                                                                                                   AAC02001 standard; cDNA; 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 treatment of cancer, leukaemia, nervous system disorders,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200164835-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inflammation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-514838/56.
DB; AAO10342.
                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                   17
                                                                                                                                                                                                                                                                                                                              15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      system disorders; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                            CTCTCATCGCTCTCG
                                                                                                                                                                                                                                                                                   CTCTCATCGCTCTCG 31
                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  BP; 110 A; 142 C; 111 G; 95 T; 1 other;
                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
protein 5'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell proliferation; cell differentiation; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID
                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                         28.8%;
                                                                                                                                                                                                                                            213
    EST,
                                                                                                                                                                                                                                                                                                                                <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NO 10333
                                                                                                                                                                                                                                                                                                                                                     Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВP
    SEQ ID
                                                                                                                                                                                                                                                                                                                                Mismatches
    ŏ.
                                                                                                                                                                                                                                                                                                                                                     DB
94;
    1999
                                                                                                                                                                                                                                                                                                                                                                         22;
                                                                                                                                                                                                                                                                                                                              ,.
                                                                                                                                                                                                                                                                                                                                                                       Length 459
                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  haematopoiesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           immune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 arthritis
                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                              Gaps
```

and

<u>.</u>.

В Ś

```
RESULT 39
ABA58638
유
                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. An ORF has been identified within the sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA libraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5' ends and can therefore be used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and chromosome mapping procedures. They are used to obtain togetream regularory seminance and to Assistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
          30-JAN-2001; 2001WO-US00669.
                                      09-AUG-2001.
                                                                                                                                                     Human foetal liver single exon nucleic acid probe #6943.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New nucleic acid that is a 5' expressed sequence tag (5' EST) for obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and fo diagnostic, forensic, gene therapy and chromosome mapping procedu
                                                                   WO200157277-A2
                                                                                          Homo sapiens
                                                                                                                     Human; foetal liver; gene expression; single exon nucleic acid
                                                                                                                                                                                 01-FEB-2002
                                                                                                                                                                                                             ABA58638
                                                                                                                                                                                                                                       ABA58638 standard; DNA; 481
                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     upstream regulatory sequences and to design expression and secretion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; SEQ ID 1999; 71pp + CD-ROM; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dumas Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EP1033401-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; 5' EST;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      therapy;
                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000-500381/45
                                                                                                                                                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                           _
                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAG01995
                                                                                                                                                                                                                                                                                                                                        ATGCAGTTCTCTCAC 15
                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                           BP; 142 A; 87 C; 111 G; 131 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000EP-0200610
                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; expressed sequence tag; secreted protein; cDNA isolation; chromosome mapping; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9905-0122487
                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                               28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Duclert
                                                                                                                                                                                                                                       ВP
                                                                                                                                                                                                                                                                                                                                                                     <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                   Score 15;
; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Giordano
                                                                                                                                                                                                                                                                                                                                                                                   DB 21;
. 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ç
                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                               Length 471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mapping procedures
                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                       probe;
                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
```

```
RESULT 40
ABA27633
ID ABA277
XX
ABA27633
ID ABA27
XX
AC ABA27
XX
DT 23-JA
XX
DT 23-JA
XX
Humar
KW Coardi
KW Coardi
KW Coardi
KW Coardi
XX
O9-Al
XX
PF 30-JI
PR 30-JI
PR 30-JI
PR 30-JI
PR 31-SI
PR 21-SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $\forall C C C C C C C C C X \forall X \forall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-FEB-2000; 2000US-0180312.
26-MAY-2000; 2000US-0207456.
30-JUN-2000; 2000US-0608408.
03-AUG-2000; 2000US-0632366.
21-SEP-2000; 2000US-0234687.
27-SEP-2000; 2000US-0236359.
04-OCT-2000; 2000GB-0024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a single exon nucleic acid probe of the invention.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from wiPO at ftp.wipo.int/pub/published_pct_sequences.
Penn SG,
                                                                                                                                                                                                                                                  30-JUN-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                                      04-FEB-2000;
26-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                  30-JAN-2001; 2001WO-US00666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; gene expression; heart; microarray; vascular system; probe; cardiovascular disease; hypertension; cardiac arrhythmia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 481 BP; 73 A; 136 C; 180 G; 92 T; 0 other;
                                                                                                                                                                                                                 21-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   congenital heart disease; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Probe #6099 for gene expression analysis in human heart cell sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABA27633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABA27633 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human genome-derived single exon nucleic acid probes useful analyzing gene expression in human fetal liver -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-483447/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Penn
                                                                      (MOLE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MOLE-) MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15 CGCTCTCATCGCTCT 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15;
                                                                   MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCTCTCATCGCTCT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 6943; 639pp + sequence listing; English
Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hanzel DK,
                                                                                                                                      2000US-0234687.
2000US-0236359.
2000GB-0024263.
                                                                                                                                                                                                                                           2000US-0180312.
2000US-0207456.
2000US-0608408.
2000US-0632366.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28.8%;
Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 15; pred. No.
Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rank DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 22; Length 481;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                             Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Listing first 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq length:
seq length:
               of
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents_NA:*

1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*

2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*

3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*

4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*

5: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*

6: /cgn2_6/ptodata/2/ina/backfilesl.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OLIGO_NUC Gapop 60.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 atgcagttctctcacgctct....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             November 13, 2003, 09:44:31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             569978 seqs, 220691566 residues
               Copyright
                                                                                                                                                                                         . . . . . . . . . . . . . . .
                                                                                                                                                                                                                                                                                            ·
                                                                                                                                                                                                                                                                                                          ·
                                                                                                                                                                                                                                                                                                                         .
                                                                                                                                                                                                                                                                                                                                       œ
                                                                                                                                                                                                                                                                                                                                                      æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     satisfying chosen
                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
               732
8100
8100
879
1632
26715
28715
28715
4438
4438
10885
10885
11146
11146
11149
11149
11149
11149
11149
11149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.6 (c) 1993 - 2003 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapext 60
                                      US-09-252-991A-13272
US-09-252-991A-3647
US-09-252-991A-3692
US-09-252-991A-2686
US-09-252-991A-2893
US-09-252-991A-2893
US-09-252-991A-15918
US-09-252-991A-15918
US-09-252-991A-15808
US-09-252-991A-15808
US-09-252-991A-15808
US-09-252-991A-15808
US-09-252-991A-15808
US-09-252-991A-15808
US-09-252-991A-10708
US-09-252-991A-10708
US-09-252-991A-10708
US-09-252-991A-10708
US-09-252-991A-10708
US-09-252-991A-10708
US-09-252-991A-10708
US-09-252-991A-11807
               US-08-669-785-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l ; Search time 52 Seconds
(without alignments)
441.383 Million cell upda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cgctgccggcctcgccagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1139956
       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                        13272, A
3647, Ap
3602, Ap
3859, App
2686, Ap
2875, Ap
2595, App
15918, A
15918, A
15774, A
15888, A
10788, A
11745, A
11867, A
11887, A
1
       w,
          Appli
       a
                                                  000 0 0
                                                                                                                                                                                                000
                                                                                                                                                                                                                                                 ററ
                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                            0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                        ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                000 0 00000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    000
         6441
6441
31880
31880
68750
68750
68750
68750
68750
68750
68750
68750
68750
68750
11110
11110
11110
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11287
11298681
22028
   US-08-669-785-1
5183745-5
US-09-453-702B-242
US-09-922-445-1
US-09-804-198-1
US-08-804-198-1
US-09-568-409-1
US-09-568-486-1
US-09-568-472-1
US-09-568-472-1
US-09-568-472-1
US-09-568-472-1
US-09-568-472-1
US-09-568-472-1
US-09-103-840A-2
US-09-103-840A-2
US-09-103-840A-1
US-09-252-991A-1068
US-09-252-991A-1068
US-09-252-991A-1068
US-09-252-991A-1099
US-09-252-991A-1099
US-09-252-991A-1099
US-09-252-991A-1099
US-09-252-991A-1099
US-09-252-991A-1099
US-09-252-991A-1099
US-09-252-991A-6642
US-09-252-991A-6299
US-09-252-991A-6464
US-09-252-991A-7091
US-09-252-991A-11029
US-09-252-991A-7091
US-09-252-991A-7092
Sequence 242, Appli Sequence 1, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 36, Appli Sequence 310, Appli Sequence 110, Appli Sequence 110, Appli Sequence 110, Appli Sequence 110, Appli Sequence 1103, Appli Sequence 5960, Appli Sequence 5978, Appli Sequence 5978, Appli Sequence 5978, Appli Sequence 5979, Appli Sequence 5979, Appli Sequence 5971, Appli Sequence 5971, Appli Sequence 6642, Appli Sequence 6715, Appli Sequence 6715, Appli Sequence 5978, Appli Sequence 5978, Appli Sequence 5979, Appli Sequence 6770, Appli Sequence 6770, Appli Sequence 6794, Appli Sequence 6791, Appli Sequence 2515, Appli Sequence 6791, Appli Sequence 6791, Appli Sequence 7791, Appli Sequence 7991, Appli Sequence 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
Patent No.
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e 1, Appli
5, 5183745
```

Word

Run 욯

				0.0		0.0	00	0	ററ		o 6	^	O					0 (200	n n	ററ	_						a
167 168 169 c 170 c 171 c 172	162 163 164 165	161 160	c 156 c 157						142	139	137			129 130	127 128	125	123	121	119	117	115			c 109	c 108	106	C 104	102
355555	13 13 13	13	13	13 13 1	1 11 L	13 13	1111	13 13	1111	1 11 11	1111	113	111	111	13	13	13	111	1 11 1	13	ا بو بر ، 4 4	14	14	14 4	14	44.	1 1 1	14
2222222222	$\sigma \sigma \sigma \sigma \sigma \sigma$	5555	555	55.	л (л (л	55.5	5 5 5	ທ ທ _່		<i>,</i> , , ,	5 5 5		55.5	ហេស	יטיייי		,,,,,,	<i>.</i>	л (п (л Un	5 5 5		. ·	ຫຸ ຫ				n
1020 1020 1020 1086	09992	000	$\omega \omega \circ$	യയ	p 00 01	P 0	on 01 4	40 40	4	4	6 6 1	U1 W W	$\sim -$	000	, 42 45		01 01 1	<i>J</i> 1 W (,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, N	6843 1230025	100	04	81	81	50	68	23
1 US 1 US 1 US 1 US 1 US 1 US																					4.	US						
-09-252-991A-108 -08-114-461-1 -08-192-156-1 -08-370-789-1 -09-252-991A-109 -09-252-991A-109	252- 252- 252- 252-	252-991A-111 581-148C-8 170-496D-249 170-496D-271	252-991A-1547 252-991A-532 252-991A-2658	328-352-2221	252-991A-926 990-823-70 477-1353-70	252- 252-	976-259-113 252-991A-424	252-991A-376 252-991A-6029	252-991A-10 252-991A-10	252-991A-200 318-739A-1	252-	060-756-98 570-314-98 252-991A-840	134-	990-1 477-	473-020A-29 473-020A-2	313-: 252-	252-991A-12 313-294A-38	170-191-37 016-434-541	313-	198-452A-3	727-034-6 -198-452A-	365-	548-	365-	596-1	770-	143-184-42	34-06
sequenc Sequenc Sequenc Sequenc Sequenc Sequenc Sequenc	Sequenc Sequenc Sequenc Sequenc Sequenc	Sequenci Sequenci Sequenci	Sequenc Sequenc Sequenc	Sequence Sequence	Sequenc	Sequenc Sequenc	Sequenc	Sequenc	Sequenc	Sequence Sequence	Segueno	Sequence Sequence	Sequenc	Sequence Sequence Sequence	Sequenc	Sequenc	Sequenc	ouenbes Seguenc	Sequenc	Sequenc	တ္က	Segueno	o o	ღღ	9 9	0.0	9 9	Sequenc
e 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	e 514, e 1059 e 1090 e 1090	e 1110 e 8, 1 e 249, e 271,	e 1547 e 532, e 2658	e 1541 e 2221	e 926.	e 9289	e 113,	e 376,	100,	1, ,	1480	98,	1894	75,	29,	2572	126	537	200.	358	ຼັດເ	η μ.	7,5	υ,	2 7	, 2, 4	42	e 4.
		≻סיקק	A Q	, `g	pp] Ag	A PO	Agg agg	App d	A P I	ğ		Appl Appl	Ap QA QA		pp1	AP	App A	pp.	365	Ą.	Appli Appli	110	. <u>.</u> .	φ1i	pli 11d	ָּבְילָ בּבְּילָ	1 dd	110
מייייים מא איני מייייים מא איני	56, A P P	pp p	ע מיםׄ 																									
o	იი			0.0		00	0.6	n (n n	n	0.0	n 0		c 202 c 203		198 C 199			C 192	. n	n	186	184	182 183	181		C 177	
242 242 243 243 244 243 243 244 244 244	C 235 A C 236 237 237 239	231 232 233 234	228 229 230	c 226 227	c 223	c 221 c 222	c 219 220	217 C 218	c 215 c 216	c 212 1	c 210	c 207	205	202	200	198	196	194	192	C 190	C 189	.86	85.4	83 2	181	179	177	176
239 13 25. 241 13 25. 241 13 25. 242 13 25. 243 13 25. 243 13 25. 243 13 25. 244 13 25. 24 245 13 25.	C 235 13 25. A C 236 13 25. A 237 13 25. A 239 13 25. A 239 13 25.	231 13 25 232 13 25 233 13 25 234 13 25	228 13 25. 229 13 25. 230 13 25.	c 225 13 25. c 226 13 25. 227 13 25.	c 223 13 25.	c 221 13 25. c 222 13 25.	C 219 13 25.	C 218 13 25	c 216 13 25.	c 212 13 25.	C 210 13 25.	c 207 13 25. 208 13 25.	205 13 25. 206 13 25.	202 13 25. 203 13 25. 204 13 25.	200 13 25. 201 13 25.	198 13 25. 199 13 25.	196 13 25. 197 13 25.	194 13 25.	192 13 25.	c 190 13 25.	188 13 25. C 189 13 25.	.86 13 25.	.84 13 25.	.82 13 25.	180 13 25.	179 13 25.	177 13 25.	176 13 25.
239 13 25.0 1912 111 240 13 25.0 1926 111 241 13 25.0 1926 111 242 13 25.0 1935 112 243 13 25.0 1935 113 25.0 1941 114 25.0 1941 115 244 13 25.0 1944 115 25.0 1940	C 235 13 25.0 1806 A C 236 13 25.0 1833 A C 237 13 25.0 1893 A 238 13 25.0 1893 A 239 13 25.0 1892	231 13 25.0 1784 232 13 25.0 1785 233 13 25.0 1788 234 13 25.0 1800	228 13 25.0 1784 229 13 25.0 1784 230 13 25.0 1784	C 225 13 25.0 1771 C 226 13 25.0 1771 227 13 25.0 1784	c 223 13 25.0 1771	c 221 13 25.0 1752 c 222 13 25.0 1755	C 219 13 25.0 1695	217 13 25.0 1687 C 218 13 25.0 1683	C 216 13 25.0 1674	c 212 13 25.0 1653 213 13 25.0 1656	C 210 13 25.0 1617	C 207 13 25.0 1590 208 13 25.0 1602 C 209 13 25.0 1605	206 13 25.0 1572 206 13 25.0 1572	202 13 25.0 1530 203 13 25.0 1552 204 13 25.0 1552	200 13 25.0 1416 201 13 25.0 1500	198 13 25.0 1362 199 13 25.0 1395	196 13 25.0 1328 197 13 25.0 1335	194 13 25.0 1290	192 13 25.0 1281	C 190 13 25.0 1254	188 13 25.0 1230 C 189 13 25.0 1251	.86 13 25.0 1218 87 13 25.0 1224	.84 13 25.0 1173 85 13 25.0 1191	.82 13 25.0 1167 .83 13 25.0 1173	180 13 25.0 1137 181 13 25.0 1140	179 13 25.0 1134	177 13 25.0 1119	176 13 25.0 1116
13 25.0 1912 4 11 240 13 25.0 1926 4 11 241 13 25.0 1926 4 11 242 13 25.0 1935 4 14 242 13 25.0 1935 4 15 243 13 25.0 1941 4 16 244 13 25.0 1944 4 17 245 13 25.0 1940 4	C 235 13 25.0 1806 4 A C 236 13 25.0 1833 4 A 237 13 25.0 1883 4 A 238 13 25.0 1896 4 A 239 13 25.0 1896 4 A 239 13 25.0 1912 4	231 13 25.0 1784 4 232 13 25.0 1785 4 233 13 25.0 1788 4 234 13 25.0 1800 4	228 13 25.0 1784 3 229 13 25.0 1784 3 230 13 25.0 1784 3	C 225 13 25.0 1771 4 C 226 13 25.0 1771 4 C 227 13 25.0 1784 2	C 223 13 25.0 1771 3 C 224 13 25.0 1771 4	C 221 13 25.0 1752 4 C 222 13 25.0 1755 4	C 219 13 25.0 1692 4 220 13 25.0 1695 4	217 13 25.0 1680 4 C 218 13 25.0 1683 4	C 216 13 25.0 1675 4 C 215 13 25.0 1674 4 C 216 13 25.0 1674 4	c 212 13 25.0 1653 4 213 13 25.0 1656 4	C 210 13 25.0 1617 4 C 211 13 25.0 1644 4	C 207 13 25.0 1590 4 208 13 25.0 1602 4 C 2009 13 25.0 1605 4	206 13 25.0 1569 4 206 13 25.0 1572 4	202 13 25.0 1530 4 203 13 25.0 1552 4 204 13 25.0 1552 5	200 13 25.0 1416 4 201 13 25.0 1500 4	198 13 25.0 1362 4 199 13 25.0 1395 4	196 13 25.0 1328 4 197 13 25.0 1335 4	194 13 25.0 1290 5	192 13 25.0 1270 4 192 13 25.0 1281 4	C 190 13 25.0 1254 4	188 13 25.0 1230 4 C 189 13 25.0 1251 4	.86 13 25.0 1218 1 87 13 25.0 1224 4	.84 13 25.0 1173 4 .85 13 25.0 1191 4	.82 13 25.0 1167 4 .83 13 25.0 1173 4	180 13 25.0 1137 4 181 13 25.0 1140 4	179 13 25.0 1134 4	177 13 25.0 1119 4	176 13 25.0 1116 4
239 13 25.0 1912 4 US-09-620- 111 240 13 25.0 1926 4 US-09-737- 111 241 13 25.0 1926 4 US-09-252- 111 241 13 25.0 1936 4 US-09-252- 112 242 13 25.0 1935 4 US-09-252- 113 25.0 1941 4 US-09-252- 114 25.0 1944 4 US-09-252- 115 25.0 1944 4 US-09-252- 116 245 13 25.0 1980 4 US-09-252-	Op c 235 13 25.0 1806 4 US-09-252- A c 236 13 25.0 1833 4 US-09-252- A c 237 13 25.0 1883 4 US-09-620- AD 238 13 25.0 1896 4 US-09-620- AD 239 13 25.0 1912 4 US-09-620-	231 13 25.0 1784 4 US-09-497- 232 13 25.0 1788 4 US-09-252- 233 13 25.0 1788 4 US-09-252- 234 13 25.0 1800 4 US-09-266-	228 13 25.0 1784 3 US-08-808- 229 13 25.0 1784 3 US-09-050- 230 13 25.0 1784 3 US-09-102-	C 225 13 25.0 1771 4 US-09-056- C 226 13 25.0 1771 4 US-09-072- C 227 13 25.0 1784 2 US-08-808-	c 223 13 25.0 1771 3 US-08-818-	C 221 13 25.0 1752 4 US-09-252- C 222 13 25.0 1755 4 US-09-252-	C 219 13 25.0 1692 4 US-09-252-20 13 25.0 1695 4 US-09-252-2	217 13 25.0 1680 4 US-09-252- C 218 13 25.0 1683 4 US-09-252-	214 13 25.0 1665 4 US-09-252- C 215 13 25.0 1671 4 US-09-252- C 216 13 25.0 1674 4 US-09-252-	c 212 13 25.0 1653 4 US-09-252-	C 210 13 25.0 1617 4 US-09-252-	C 207 13 25.0 1590 4 US-09-252-	205 13 25.0 1569 4 US-09-252- 206 13 25.0 1572 4 US-09-252-	202 13 25.0 1530 4 US-09-25-0 203 13 25.0 1552 4 US-09-786- 204 13 25.0 1552 5 PCT-11593-0	200 13 25.0 1416 4 US-09-252- 201 13 25.0 1500 4 US-09-252-	198 13 25.0 1362 4 US-09-252- 199 13 25.0 1395 4 US-09-252-	196 13 25.0 1328 4 US-09-297-	194 13 25.0 1290 5 PCT-US93-0	192 13 25.0 1281 4 US-09-252- 192 13 25.0 1281 4 US-09-252-	C 190 13 25.0 1254 4 US-09-252-	188 13 25.0 1230 4 US-09-252- C 189 13 25.0 1251 4 US-09-252-	87 13 25.0 1218 1 US-08-351-	.84 13 25.0 1173 4 US-09-252- .85 13 25.0 1191 4 US-09-252-	.82 13 25.0 1167 4 US-09-252-	180 13 25.0 1137 4 US-09-716- 181 13 25.0 1140 4 US-09-252-	176 13 25.0 1114 4 US-09-252-	177 13 25.0 1119 4 US-09-252-	176 13 25.0 III6 4 US-09-252-
11 240 13 25.0 1912 4 US-09-620-312D-942 11 240 13 25.0 1926 4 US-08-737-109-9 11 241 13 25.0 1926 4 US-09-252-991A-951 11 242 13 25.0 1935 4 US-09-252-991A-851 12 243 13 25.0 1941 4 US-09-252-991A-836 13 25.0 1944 4 US-09-252-991A-836 14 245 13 25.0 1980 4 US-09-252-991A-850	Op c 235 13 25.0 1806 4 US-09-252- A c 236 13 25.0 1833 4 US-09-252- A c 237 13 25.0 1883 4 US-09-620- AD 238 13 25.0 1896 4 US-09-620- AD 239 13 25.0 1912 4 US-09-620-	231 13 25.0 1784 4 US-09-497- 232 13 25.0 1788 4 US-09-252- 233 13 25.0 1788 4 US-09-252- 234 13 25.0 1800 4 US-09-266-	228 13 25.0 1784 3 US-08-808- 229 13 25.0 1784 3 US-09-050- 230 13 25.0 1784 3 US-09-102-	C 225 13 25.0 1771 4 US-09-056- C 226 13 25.0 1771 4 US-09-072- C 227 13 25.0 1784 2 US-08-808-	c 223 13 25.0 1771 3 US-08-818-112-13 c 224 13 25.0 1771 4 US-08-818-111-13	C 221 13 25.0 1752 4 US-09-252-991A-161 C 222 13 25.0 1755 4 US-09-252-991A-358	c 219 13 25.0 1692 4 US-09-252-991A-126	217 13 25.0 1680 4 US-09-252-991A-119 C 218 13 25 0 1683 4 US-09-252-991A-833	214 13 25.0 1665 4 US-09-252- C 215 13 25.0 1671 4 US-09-252- C 216 13 25.0 1674 4 US-09-252-	c 212 13 25.0 1653 4 US-09-252-991A-1111 213 13 25.0 1656 4 US-09-252-991A-413	C 210 13 25.0 1617 4 US-09-252-991A-792	C 207 13 25.0 1590 4 US-09-252-	205 13 25.0 1569 4 US-09-252-991A-1643	202 13 25.0 1530 4 US-09-252-991A-677 203 13 25.0 1552 4 US-09-768-240-24 203 13 25.0 1552 5 PCT-11893-04392-1	200 13 25.0 1416 4 US-09-252- 201 13 25.0 1500 4 US-09-252-	198 13 25.0 1362 4 US-09-252-991A-823 199 13 25.0 1395 4 US-09-252-991A-1653	196 13 25.0 1328 4 US-09-297-	13 25.0 1290 5 PCT US-22-124-127-127-127-127-127-127-127-127-127-127	192 13 25.0 1281 4 US-09-252-991A-3691 192 13 25.0 1281 4 US-09-252-991A-1026	C 190 13 25.0 1254 4 US-09-252-991A-415	188 13 25.0 1230 4 US-09-252- C 189 13 25.0 1251 4 US-09-252-	87 13 25.0 1218 1 US-08-351-473B-6	.84 13 25.0 1173 4 US-09-252- .85 13 25.0 1191 4 US-09-252-	.83 13 25.0 1167 4 US-09-252-991A-108	180 13 25.0 1137 4 US-09-716-865-21 181 13 25.0 1140 4 US-09-252-991A-3026	176 13 23.0 1115 1 03-03-252-351A-110 179 13 25.0 1134 4 US-09-252-991A-313	177 13 25.0 1119 4 US-09-252-991A-8800	176 13 25.0 III6 4 US-09-252-99IA-2IO
11 240 13 25.0 1912 4 US-09-620-312D-742 Sequenc 11 240 13 25.0 1926 4 US-09-252-991A-9758 Sequenc 11 241 13 25.0 1926 4 US-09-252-991A-9513 Sequenc 11 242 13 25.0 1935 4 US-09-252-991A-12669 Sequenc 12 243 13 25.0 1941 4 US-09-252-991A-8364 Sequenc 12 24 13 25.0 1944 4 US-09-252-991A-8507 Sequenc 24 13 25.0 1980 4 US-09-252-991A-8507 Sequenc	pp c 235 13 25.0 1806 4 US-09-252-991A-11213 Sequenc A C 236 13 25.0 1833 4 US-09-252-991A-8371 Sequenc A C 236 13 25.0 1833 4 US-09-252-991A-8371 Sequenc A C 237 13 25.0 1883 4 US-09-620-312D-629 Sequenc A C 239 13 25.0 1896 4 US-09-252-991A-9873 Sequenc A C 239 13 25.0 1896 4 US-09-620-312D-742 Sequenc A C 239 13 25.0 1912 4 US-09-620-312D-742 Sequence A C 239 13 25.0 1912 4 US-09-620-312D-742	231 13 25.0 1784 4 US-09-497-698-19 Sequenc 232 13 25.0 1785 4 US-09-252-991A-1528 Sequenc 233 13 25.0 1788 4 US-09-252-991A-4632 Sequenc 234 13 25.0 1800 4 US-09-266-965-16 Sequenc	228 13 25.0 1784 3 US-08-808-323-19 Sequenc 229 13 25.0 1784 3 US-09-050-603A-19 Sequenc 230 13 25.0 1784 3 US-09-102-420B-19 Sequenc	C 225 13 25.0 1771 4 US-09-056-556-13 Sequenc C 226 13 25.0 1771 4 US-09-072-596-13 Sequenc 227 13 25.0 1784 2 US-08-808-931-19 Sequenc	c 223 13 25.0 1771 3 US-08-818-112-13 Sequenc c 224 13 25.0 1771 4 US-08-818-111-13 Sequenc	c 221 13 25.0 1752 4 US-09-252-991A-16164 Sequenc c 222 13 25.0 1755 4 US-09-252-991A-3588 Sequenc	c 219 13 25.0 1692 4 US-09-252-991A-12639 Seguence 220 13 25.0 1695 4 US-09-252-991A-8969 Seguence	217 13 25.0 1680 4 US-09-252-991A-11917 Sequence 218 13 25.0 1683 4 US-09-252-991A-8337 Sequence 218 13 25.0 1683 4 US-09-252-991A-8337 Sequence 218 25.0 1683 4 US-09-252-991A-833 4 US-09-2	214 13 25.0 1665 4 US-09-252-991A-15061 Sequenc C 215 13 25.0 1671 4 US-09-252-991A-11030 Sequenc C 216 13 25.0 1674 4 US-09-252-991A-1645 Seguenc	c 212 13 25.0 1653 4 US-09-252-991A-1111 Sequence of the control o	C 210 13 25.0 1617 4 US-09-252-991A-381 Sequ	C 207 13 25.0 1590 4 US-09-252-991A-11088 Seqn 208 13 25.0 1602 4 US-09-252-991A-13706 Seqn 209 13 25.0 1605 4 US-09-252-991A-13706 Seqn	205 13 25.0 1569 4 US-09-252-991A-16430 Seqn	202 13 25.0 1530 4 US-09-252-991A-6770 Seq. 203 13 25.0 1552 4 US-09-786-240-24 Seq. 204 13 25.0 1552 5 PCT-17893-04392-1 Sec.	200 13 25.0 1416 4 US-09-252-991A-11168 Seq 201 13 25.0 1500 4 US-09-252-991A-9248 Seq	198 13 25.0 1362 4 US-09-252-991A-823 Seq. 199 13 25.0 1395 4 US-09-252-991A-16537 Seq.	196 13 25.0 1328 4 US-09-297-911-22 Sequential (197 13 25.0 1335 4 US-09-252-991A-973 Sequential (197 13 25.0 13 25.	194 13 25.0 1290 5 PCT-US93-0-4302-2 Sequi	192 13 25.0 1281 4 US-09-252-991A-3621 Sequence 192 13 25.0 1281 4 US-09-252-991A-3621 Sequence 192 13 25.0 1287 4 US-08-252-991A-3622 Sequence 192 1287 4 US-08-252-991A-3622	c 190 13 25.0 1254 4 US-09-252-991A-415 Sequ	188 13 25.0 1230 4 US-09-252-991A-11985 Sequence of the control of	87 13 25.0 1218 1 US-08-351-473B-6 Sequ	.84 13 25.0 1173 4 US-09-252-991A-13284 Seqn .85 13 25.0 1191 4 US-09-252-991A-10727 Second	.82	180 13 25.0 1137 4 US-09-716-865-21 seque	179 13 25.0 1114 4 US-09-252-991A-3134 Seque	177 13 25.0 1119 4 US-09-252-991A-8800 Seque	13 25.0 1116 4 US-09-252-991A-2102 Segue
39 13 25.0 1912 4 US-09-620-312D-742 Seque 11 240 13 25.0 1926 4 US-09-252-991A-9758 Seque 11 241 13 25.0 1926 4 US-09-252-991A-9758 Seque 11 242 13 25.0 1935 4 US-09-252-991A-12669 Seque 14 US-09-252-991A-12669 Seque Seque 24 13 25.0 1941 4 US-09-252-991A-1866 Seque 3 245 13 25.0 1980 4 US-09-252-991A-8507 Seque	pp c 235 13 25.0 1806 4 US-09-252-991A-11213 Sequence A c 236 13 25.0 1833 4 US-09-252-991A-8371 Sequence A 237 13 25.0 1883 4 US-09-620-312D-629 Sequence A 238 13 25.0 1883 4 US-09-620-312D-742 Sequence A 239 13 25.0 1896 4 US-09-620-312D-742 Sequence	231 13 25.0 1784 4 US-09-497-698-19 Sequence 232 13 25.0 1785 4 US-09-252-991A-1528 Sequence 233 13 25.0 1788 4 US-09-252-991A-4632 Sequence 234 13 25.0 1800 4 US-09-266-965-16 Sequence	228 13 25.0 1784 3 US-08-808-323-19 Sequence 229 13 25.0 1784 3 US-09-050-603A-19 Sequence 230 13 25.0 1784 3 US-09-102-420B-19 Sequence	C 225 13 25.0 1771 4 US-09-056-556-13 Sequence C 226 13 25.0 1771 4 US-09-072-596-13 Sequence 227 13 25.0 1784 2 US-08-808-931-19 Sequence	c 223 13 25.0 1771 3 US-08-818-112-13 Sequence c 224 13 25.0 1771 4 US-08-818-111-13 Sequence	c 221 13 25.0 1752 4 US-09-252-991A-16164 Sequence c 222 13 25.0 1755 4 US-09-252-991A-3588 Sequence	c 219 13 25.0 1692 4 US-09-252-991A-12639 Seguence 220 13 25.0 1695 4 US-09-252-991A-6969 Seguence	217 13 25.0 1680 4 US-09-252-991A-11917 Segmence	c 216 13 25.0 1655 4 US-09-252-991A-16061 Sequence c 215 13 25.0 1671 4 US-09-252-991A-1645 Segmence c 216 13 25.0 1674 4 US-09-252-991A-1645 Segmence	c 212 13 25.0 1653 4 US-09-252-991A-1111 Sequence 213 13 25.0 1656 4 US-09-252-991A-413 Sequence 213 13 25.0 1659 4 US-09-252-991A-413 Sequence 213 13 13 13 13 13 13 13 13 13 13 13 13 1	c 210 13 25.0 1617 4 US-09-252-991A-792 Sequence	c 207 13 25.0 1590 4 US-09-252-991A-11088 Sequence 208 13 25.0 1602 4 US-09-252-991A-3776 Sequence 208 13 25.0 1602 4 US-09-252-991A-3776 Sequence 209 13 25.0 1605 4 US-09-252-991A-3706 Sequence 2006 13 25.0 1605 4 US-09-252-991A-3706 Sequence 2007 13 25.0 1605 4 US-09-252-991A-3706 Sequence 2007 13 25.0 1605 4 US-09-252-991A-31304 Sequence 2007 13 25.0 1605 4 US-09-252-991A-31308	205 13 25.0 1569 4 US-09-252-991A-16430 Sequence 206 13 25.0 1572 4 US-09-252-991A-16430 Sequence	202 13 25.0 1530 4 US-09-252-991A-6770 Sequence 203 13 25.0 1552 4 US-09-252-240-24 Sequence 203 13 25.0 1552 5 PCT-11893-04392-1 Sequence 204 13 25.0 1552 5 PCT-11893-04392-1	200 13 25.0 1416 4 US-09-252-991A-11168 Sequence 201 13 25.0 1500 4 US-09-252-991A-9248 Sequence	198 13 25.0 1362 4 US-09-252-991A-823 Sequence 199 13 25.0 1395 4 US-09-252-991A-16537 Sequence	196 13 25.0 1328 4 US-09-297-911-22 Sequence 197 13 25.0 1315 4 US-09-252-991A-973 Sequence	194 13 25.0 1290 5 PCT-US93-04-392-2 Sequence	192 13 25.0 1281 4 US-09-2525-931A-3691 Sequence 36:	c 190 13 25.0 1254 4 US-09-252-991A-415 Sequence 41	188 13 25.0 1230 4 US-09-252-991A-11985 Sequence c 189 13 25.0 1251 4 US-09-252-991A-2858 Sequence	.86 13 25.0 1218 1 US-08-351-473B-6 Sequence 6,	.84 13 25.0 1173 4 US-09-252-991A-13284 Sequence 13:	.82	180 13 25.0 1137 4 US-09-716-865-21 Sequence 21 181 13 25.0 1140 4 US-09-252-991A-3026 Sequence 30	179 13 25.0 1134 4 US-09-252-991A-3134 Sequence 31:	177 13 25.0 1119 4 US-09-252-991A-8800 Sequence 88	175 13 25.0 1116 4 US-09-252-991A-2102 Sequence 210

C 312 C 313 C 314 C 315 C 316 316 317 C 318	H H O O			322	0 10 10	999	229	28 29	288	28	C 281 C 282 C 283	28	27	27	27	77	200	200	200	101	o o	255	7 (7)	5	υū	лич	JNN	4.4
11222222	13 13 13	3 2 2 5	1333	1111	1111	13 13 13	111	13 13	13 13 1	: 1. 1.	13 13	1111	131	13	13 2	113	13	: L	111	: L	13 13	13	:::	13 13	13 1	111	111	13 6
2222223	555555	, w.w.	5555	555	, w. w.		າທຸ	55.	ຫ ຫ ບ	5.5.5	ហហហ	555	ຫ ຫ ຫ	55.55	ហហ	י ייי	7 57 5	יטי	ייי	יטי	ທຸ	5	3 (7)	ກຸທ	50	י יי	n .ss.	ທິທ
6855 4 7176 4 7808 4 8371 4 11561 1 11561 2 11561 3 18318 1	816 611 611 611	513	513	314	394	394	377	377 377	092	989	989 989 2962	666	204	138	116	027	964	823	597 798	478	445	385	329	298 301	256	117	048	001
US-09- US-09- US-09- US-08- US-08- US-08- US-08- US-08-	US-08-508-0 US-08-402-0 US-08-402-0 US-08-402-0	PCT-0895-14 US-08-808-1	US-08-338-1 US-08-337-3 US-08-724-0	US-09-620-312D-98	PCT-US94-08 US-09-252-9	US-08-471-0 US-08-471-0 US-09-342-0	US-09-479-	US-08-911-8	US-09-252-9 US-09-252-9	PCT-US95-13659-3	US-08-336-3 US-08-327-4 US-08-327-4	5248670-3 US-09-453-702B-1	US-09-252-991A-1506 US-09-252-991A-3126 US-07-852-132A-13	US-09-234-332-5 US-09-252-991A-146	US-08-149-103-2 US-08-451-883-2	US-09-252-991A-2758	US-09-252-991A-031	US-09-252-991A-2	US-09-252-991A-1 US-09-218-363-1	US-09-252-991A-592	US-09-252-991A-14 US-09-308-345A-1	US-09-252-991A-1199	US-09-411-977-1	US-09-252-991A-845	US-09-252-991A-1	US-09-149-476-158	US-08-776-251-1 US-09-218-363-5	US-09-134-0 US-08-776-2
Sequence 3, Appli Sequence 626, App Sequence 247, Appl Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli Sequence 6, Appli	equence :	equence equence	equence 'equence '	equence ;	equence	equence :	equence	equence :	equence .	equence	equence equence	tent No.		equence	equence	equence	equence	equence	equence	equence	equence	equence	equence	equence	equence	equence	equence	equence
; 																												
386 386 386 387 387 388 389 111 390 391	C C	C C 37	~~~	~l ~l ~l	J 00 0	ካ ጥ ጥ	6 6 1	~~~	תו הס	10 10 1	ששה	10 10 11	. w w	* * *	<u>.</u>	<u>.</u> .	<u></u>	(L) (L		w		1.1 1.6	u u	. ω	W W			
C C C C C C C C C C C C C C C C C C C	C 380 C 382 382 1383	C 377 1 378 1 C 379 1	374 1 375 1 376 1	71 72 1 73	70 1	66 67 1	65	62	359 1 360 1	357 1	354 355 1	352 352 1	349 1 350 1	347 1	345 1	343	341 1	339 1	336	335	333	31 32 1	330	328	326 I 327 I	325	322	320 1 321 1
C 392	C 380 12 23 382 12 23 383 12 23 384 12 23 384 12 23	C 377 12 2 378 12 2 C 379 12 2	374 12 23 375 12 23 376 12 23	71 12 23 72 12 23 73 12 23	69 12 23 70 12 23	66 12 23 67 12 23	64 12 23 65 12 23	62 12 23	359 12 23 360 12 23	357 12 23 358 12 23	354 12 23 355 12 23	351 12 2 352 12 2 353 12 2	349 12 23. 350 12 23.	347 12 2 348 12 2	344 12 23. 345 12 23.	342 12 23. 343 12 23.	340 12 23. 341 12 23.	338 12 23. 339 12 23.	336 13 25.0 337 13 25.0	335 13 25.0	333 13 25.	31 13 25. 32 13 25.	330 13 25.	328 13 25.	326 13 25. 327 13 25.	325 13 25.	322 13 2 323 13 2	320 13 25. 321 13 25.
385 12 23.1 25.5 386 12 23.1 25.7 387 12 23.1 25.7 388 12 23.1 26.3 388 12 23.1 26.3 399 12 23.1 26.4 391 12 23.1 270 391 12 23.1 270 392 12 23.1 279	C 380 12 23.1 246 C 381 12 23.1 246 382 12 23.1 247 383 12 23.1 247 384 12 23.1 247	C 377 12 23.1 242 378 12 23.1 242 C 379 12 23.1 242	374 12 23.1 242 375 12 23.1 242 376 12 23.1 242	71 12 23.1 241 72 12 23.1 241 73 12 23.1 241	70 12 23.1 213 70 12 23.1 241	66 12 23.1 203 67 12 23.1 203 68 12 23.1 203	64 12 23.1 175 65 12 23.1 202	62 12 23.1 137 63 12 23.1 137	359 12 23.1 94 360 12 23.1 111 361 13 33 1 137	357 12 23.1 32 358 12 23.1 40	354 12 23.1 26 355 12 23.1 32 356 12 23.1 32	351 12 23.1 24 352 12 23.1 26 353 12 23.1 26	349 12 23.1 24 350 12 23.1 24	347 12 23.1 24 348 12 23.1 24	344 12 23.1 24 345 12 23.1 24 346 13 33 1 24	343 12 23.1 24 343 12 23.1 24	340 12 23.1 24 341 12 23.1 24	338 12 23.1 24 339 12 23.1 24	336 13 25.0 536165 337 13 25.0 1664976	335 13 25.0 8	333 13 25.0 6	31 13 25.0 5 32 13 25.0 5	330 13 25.0	328 13 25.0	326 13 25.0 3 327 13 25.0 5	325 13 25.0 3	322 13 25.0 1 323 13 25.0 1	320 13 25.0 1 321 13 25.0 1
385 12 23.1 386 12 23.1 387 12 23.1 388 12 23.1 388 12 23.1 0 390 12 23.1 0 391 12 23.1 0 392 12 23.1	C 380 12 23.1 246 2 US-09-313	c 377 12 23.1 242 3 US-08-983-440-26 378 12 23.1 242 4 US-09-367-895-12 c 379 12 23.1 242 4 US-09-367-895-26	374 12 23.1 242 3 US-08-981-803-12 375 12 23.1 242 3 US-08-981-803-26 376 12 23.1 242 3 US-08-983-440-12	71	70 12 23.1 213 4 US-09-670	66 12 23.1 203 1 US-08-382 67 12 23.1 203 4 US-08-585	64 12 23.1 175 4 US-09-477	62 12 23.1 137 1 05-08-299 63 12 23.1 137 5 PCT-US95- 63 12 23.1 175 3 US-08-990	359 12 23.1 94 4 US-08-585	357 12 23.1 32 4 US-09-634 358 12 23.1 40 3 US-08-841	354 12 23.1 26 4 US-09-225 355 12 23.1 32 1 US-08-267 356 12 23.1 32 1 US-08-267	351 12 23.1 24 5 PCT-US59 352 12 23.1 26 2 US-08-859 353 12 23.1 26 4 US-09-225	349 12 23.1 24 3 US-09-502 350 12 23.1 24 3 US-09-502 351 12 23.1 24 3 US-09-502 351 12 23.1 24 3 US-09-502	347 12 23.1 24 2 US-08-779 348 12 23.1 24 3 US-08-841	344 12 23.1 24 1 US-08-323 345 12 23.1 24 1 US-08-323 346 12 23.1 24 1 US-08-323	342 12 23.1 24 1 US-08-323 343 12 23.1 24 1 US-08-323	340 12 23.1 24 1 US-08-450 341 12 23.1 24 1 US-08-450	339 12 23.1 24 1 US-08-450 339 12 23.1 24 1 US-08-450	336 13 25.0 536165 4 US-09-214	335 13 25.0 83450 4 US-09-811	333 13 25.0 80246 3 US-09-078	31	330 13 25.0 52297 4 US-08-705	328 13 25.0 50341 2 US-09-075	326 13 25.0 37030 4 US-08-31 327 13 25.0 50341 1 US-08-247	324 13 25.0 36181 4 US-08-923 325 13 25.0 36519 3 US-08-923	322 13 25.0 18318 3 US-09-527-657-6 323 13 25.0 33000 4 US-09-215-694-18	320 13 25.0 18318 2 US-08-926-922- 321 13 25.0 18318 3 US-09-253-682-

		44444444	<u> </u>	444444444444444444444444444444444444444	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
111111111	11111111	122	122222222	111111111111111111111111111111111111111	
					222222222222222222222222222222222222222
4444450 60000 600000 6000000000000000000	. 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	4 4 4 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	44444444444444444444444444444444444444	399 401 401 401 401 401 401 402 405 405	288 288 288 288 288 288 288 299 310 310 311 311 311 311 311 311 311 311
US-09-857-556A-2 US-09-857-556A-2 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1	US-09-060-756-179 US-09-670-314-179 US-09-670-314-179 US-09-252-991A-1212 US-09-252-991A-1274 US-09-252-991A-1574 US-09-252-991A-1545 US-09-252-991A-1545	US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-19-637A-3 US-09-107-532A-1 US-09-107-532A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1	US-09-252-991A-1 US-08-905-223-1E US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-254-991A-1	US-08-424-0 PCT US3-11 US-08-446-0 US-08-444-1 US-08-461-3 US-08-461-3 US-08-485-3 US-09-702-7 US-09-702-7 US-09-736-4 US-09-736-22-9 US-09-252-9	4 US-09-313-294A-4409 4 US-09-313-294A-987 4 US-09-313-294A-987 4 US-09-313-294A-1392 4 US-09-313-294A-4514 4 US-09-313-294A-4514 4 US-09-313-294A-1073 4 US-09-165-868-6 4 US-09-252-991A-1073 4 US-09-252-991A-12505 4 US-09-252-991A-12505 4 US-09-252-991A-12605 4 US-09-252-991A-12605 4 US-09-252-991A-19606 4 US-09-252-991A-9606 4 US-09-252-991A-9606 5 US-09-252-991A-9606 6 US-09-252-991A-9606 7 US-09-252-991A-9606
equence equence equence equence equence equence equence	equence equence equence equence equence	equence equence equence equence equence equence	equence equence equence equence equence equence equence equence	equence equence equence equence equence equence equence equence equence	
					
			,		
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		រាហៈ ហេ ហេ ហេ ហេ ហេ ហេ ហ		4444410	CC C C C C C C C C C C C C C C C C C C
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	7 5 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 5 5 5 4 4 4 4 4 4 9 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
532 12 23 533 12 23 534 12 23 535 12 23 536 12 23 536 12 23 537 12 23 538 12 23	524 12 23 525 12 23 526 12 23 527 12 23 528 12 23 528 12 23 528 12 23 528 12 23	514 12 23 515 12 23 517 12 23 518 12 23 519 12 23 520 12 23 520 12 23 520 12 23 520 12 23	505 12 23 506 12 23 508 12 23 509 12 23 510 12 23 511 12 23 512 23 512 23 513 23 513 23	493 12 23 496 12 23 497 12 23 497 12 23 499 12 23 500 12 23 500 12 23 501 12 23 502 12 23 503 12 23 504 23 504 23 505 23 506 23 507 23 508 23	4466 470 4770 4770 4772 11 44776 10 44776 10 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
532 12 23.1 642 533 12 23.1 642 533 12 23.1 645 534 12 23.1 645 535 12 23.1 645 536 12 23.1 650 537 12 23.1 650 538 12 23.1 650	523 12 23.1 627 524 12 23.1 627 525 12 23.1 627 526 12 23.1 627 527 12 23.1 630 528 12 23.1 630 528 12 23.1 630 529 12 23.1 639 520 12 23.1 639 520 12 23.1 639	514 12 23.1 603 515 12 23.1 609 516 12 23.1 609 517 12 23.1 612 518 12 23.1 612 518 12 23.1 613 519 12 23.1 621 520 12 23.1 621 521 12 23.1 621	505 12 23.1 579 506 12 23.1 582 507 12 23.1 590 508 12 23.1 590 509 12 23.1 597 510 12 23.1 597 511 23.1 600 512 23.1 600 512 23.1 600	493 12 23.1 559 494 12 23.1 558 495 12 23.1 561 496 12 23.1 561 497 12 23.1 564 498 12 23.1 564 499 12 23.1 564 499 12 23.1 564 500 12 23.1 567 502 12 23.1 570 503 12 23.1 570 503 12 23.1 570 504 23.1 570	466 469 12 23.1 489 470 12 23.1 483 477 12 23.1 483 477 12 23.1 489 476 12 23.1 489 476 12 23.1 489 477 12 23.1 489 477 12 23.1 495 477 12 23.1 495 477 12 23.1 495 478 12 23.1 495 479 12 23.1 495 479 12 23.1 495 479 12 23.1 495 479 12 23.1 495 489 489 481 12 23.1 498 489 489 489 489 489 489 489
531 12 23.1 642 4 US-09-252-99 532 12 23.1 642 4 US-09-252-99 533 12 23.1 645 4 US-09-252-99 534 12 23.1 645 4 US-09-252-99 535 12 23.1 645 4 US-09-252-99 536 12 23.1 645 4 US-09-252-99 537 12 23.1 645 4 US-09-252-99 538 12 23.1 650 4 US-09-251-01 539 12 23.1 650 4 US-09-251-01 539 12 23.1 660 4 US-09-252-99	522 12 23.1 627 4 US-09-218-904-9 524 12 23.1 627 4 US-09-218-904-9 525 12 23.1 627 4 US-09-252-991A- 526 12 23.1 627 4 US-09-252-991A- 527 12 23.1 639 4 US-09-252-991A- 528 12 23.1 639 4 US-09-252-991A- 529 12 23.1 639 4 US-09-252-991A- 520 12 23.1 639 6 US-09-252-991A- 520 12 23.1 639 6 US-09-252-991A-	514 12 23.1 603 4 US 09-252-99 515 12 23.1 609 4 US 09-252-99 516 12 23.1 609 4 US 09-252-99 517 12 23.1 612 4 US 09-199-63 518 12 23.1 612 4 US 09-221-01 519 12 23.1 621 4 US 09-221-01 520 12 23.1 621 4 US 09-252-99 520 12 23.1 621 4 US 09-252-99 520 12 23.1 621 4 US 09-252-99 520 12 23.1 624 1 US 09-181-97	505 12 23.1 579 4 US-09-252-991A-999 506 12 23.1 582 4 US-09-252-991A-125 507 12 23.1 582 4 US-09-252-991A-125 508 12 23.1 590 3 US-08-998-416-208 509 12 23.1 590 3 US-08-991A-117 510 12 23.1 597 4 US-09-252-991A-134 511 12 23.1 600 4 US-09-252-991A-134 512 12 23.1 600 4 US-09-252-991A-134 513 12 23.1 602 3 US-09-078-294-471 514 12 23.1 602 3 US-09-078-294-471	493 12 23.1 555 4 US-09-252-99 494 12 23.1 558 4 US-09-252-99 495 12 23.1 558 4 US-09-252-99 496 12 23.1 561 4 US-09-252-99 496 12 23.1 561 4 US-09-252-99 498 12 23.1 561 4 US-09-252-99 499 12 23.1 564 4 US-09-252-99 500 12 23.1 564 4 US-09-252-99 501 12 23.1 564 4 US-09-252-99 502 13 23.1 567 4 US-09-252-99 503 12 23.1 570 4 US-09-252-99 504 15 23.1 570 4 US-09-252-99 505 17 23.1 570 4 US-09-252-99 506 18 23.1 570 4 US-09-252-99 507 18 23.1 570 4 US-09-252-99 508 19 23.1 570 4 US-09-252-99	468 12 23.1 482 3 US-09-060-756-113 469 12 23.1 482 4 US-09-670-314-13 470 12 23.1 483 4 US-09-252-991A-181 471 12 23.1 483 4 US-09-252-991A-181 472 12 23.1 489 3 US-09-060-756-63 473 12 23.1 489 3 US-09-252-991A-63 474 12 23.1 489 4 US-09-252-991A-63 475 12 23.1 489 4 US-09-252-991A-63 476 12 23.1 489 4 US-09-252-991A-44 478 12 23.1 498 4 US-09-252-991A-44 478 12 23.1 498 4 US-09-455-960-3 479 12 23.1 498 4 US-09-455-960-3 479 12 23.1 498 4 US-09-252-991A-191-56 470 12 23.1 513 4 US-09-252-991A-191-56 471 12 23.1 513 4 US-09-252-991A-191-52 472 13 1513 4 US-09-252-991A-191-52 473 14 15 15 15 15 15 15 15 15 15 15 15 15 15

11098		10 10 10 10 10	c 590 c 591 c 592	D 40 40 40	C C C S 83 C S 84 S 85		575 576	ノレココ	1000 0	រហហហ	თთთს	ហេសេស	ហេសស		444	444	
1222122	311222	12 12 12	122	1221	1222	12	122	12 12 12	1222	122	12	2222	12	1222	12 12	12	12 12 12
222333	3233333			~ ~ ~ ~ ~ .		$\omega \omega \omega \omega$					$\omega \omega \omega \omega$. w w w	ω ω ω ι	. w w w	$\omega \omega \omega$	ω ω ω	$\omega \omega \omega \omega$
870 870 872 873 873	846 855 855 855 855 855 855 855 855 855 85	825 837 840 842	819 822 822	798 801 810	789 789 791	783 786 786	768 774 780	750 753 762	735 744 747	717 723 730	710 711 711	702 703	698	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	671 672 673	669 671	6663 6633
4 US-09-252-991A-1268 4 US-09-252-991A-12645 4 US-09-252-991A-1645 4 US-09-620-312D-316 4 US-09-252-991A-6226 4 US-09-252-991A-14978 2 US-08-937-972-2 4 US-09-252-991A-924	US-09-252-991A-3 US-09-252-991A-3 US-09-252-991A-3 US-09-252-991A-3 US-09-252-991A-3	US-09-252-991A-576 US-09-252-991A-430 US-09-252-991A-527 US-09-252-991A-452 US-09-620-312D-318	US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1 US-09-252-991A-1	US-09-199-637A-1 US-09-252-991A-1 US-09-252-991A-1	US-09-252-991A-9 US-09-252-991A-4 US-09-663-600A-4	US-09-252-991A-1 US-09-252-991A-1 US-09-495-050A-2 US-09-252-991A-1	US-09-252-991A-153 US-09-252-991A-153 US-09-252-991A-284	US-09-167-717-3 US-09-252-991A-8043 US-09-252-991A-1306	US-09-252-	US-09-252-991A-729 US-08-618-911-1 US-09-663-600A-142	US-09-252-991	US-08-824-577-2 US-09-252-991A-1 US-09-484-970B-1	US-09-252-991A-5 US-09-252-991A-6 US-09-328-352-94	US-08-998-416-672 US-09-651-169A-44 US-08-998-416-713	US-09-103-875-29 US-09-252-991A-1 US-08-998-416-19	US-09-252-991A-1 US-09-252-991A-1 US-08-866-340-23	US-09-252-991A-106 US-09-252-991A-913 US-09-328-352-181 US-09-252-991A-162
Sequence 5034, Ap Sequence 1268, Ap Sequence 10645, A Sequence 316, App Sequence 6226, Ap Sequence 14978, A Sequence 2, Appli Sequence 924, App		ω ω ω ω	156 156 116) H H W F	מאירי	1214	284	130	114	729	47,	112	692	673 44 71	29, 155	$\omega = \omega$	1065, A 9138, A 181, Ap 1622, A
000 0 0	000	0 0 0	0.0	0 00	. 0.0	0.0	0	0 0	. 0	0.0	0.0	0	0.00	0.0	0.0.0	0.0.0	0.000
c 677 c 678 c 679 c 680 c 682 c 683			C C 663 663 666	C C C C C C C C C C C C C C C C C C C		C 651 C 652 653	648 648 650		C 6440	C C 637	C 633	C 639	C 625	C 623 C 623	c 619 c 620 c 621	c 616 c 617 c 618	c 612 c 613 c 614
	672	667 1 668 1 669 1 670 1	666 1	6600	656	651 652 1 653	648	6444	640 641 642	636	6333		625 626 1	622 623	619 620	616 617 1	612 613 614
677 678 679 1 680 1 682 1 683 1	672 12 23 673 12 23 674 12 23 675 12 23 676 12 23	667 12 23. 668 12 23. 669 12 23. 670 12 23. 671 12 23.	662 12 663 12 664 12 665 12	659 12 23 660 12 23 661 12 23	655 12 23. 656 12 23. 657 12 23.	651 12 23. 652 12 23. 653 12 23. 654 12 23.	647 12 23. 648 12 23. 649 12 23. 650 12 23.	644 12 23 645 12 23 646 12 23	640 12 23 640 12 23 641 12 23 642 12 23	636 12 23 637 12 23 638 12 23	632 12 23. 633 12 23. 634 12 23.	12 23 12 23 12 23 12 23	625 12 23. 626 12 23. 627 12 23.	622 12 23. 623 12 23. 624 12 23.	619 12 23 620 12 23 621 12 23	616 12 23 617 12 23 618 12 23	612 12 23 613 12 23 614 12 23 615 12 23
677 12 23 678 12 23 679 12 23 680 12 23 681 12 23 682 12 23 683 12 23 684 12 23	672 12 23.1 673 12 23.1 674 12 23.1 675 12 23.1 675 12 23.1	667 12 23.1 668 12 23.1 669 12 23.1 670 12 23.1 671 12 23.1	662 12 23.1 663 12 23.1 664 12 23.1 665 12 23.1	659 12 23.1 660 12 23.1 661 12 23.1	655 12 23.1 656 12 23.1 657 12 23.1	651 12 23.1 652 12 23.1 653 12 23.1 654 12 23.1	647 12 23.1 648 12 23.1 649 12 23.1 650 12 23.1	644 12 23.1 645 12 23.1 646 12 23.1 646 23.1	640 12 23.1 640 12 23.1 641 12 23.1 642 12 23.1	636 12 23.1 637 12 23.1 638 12 23.1	632 12 23.1 633 12 23.1 634 12 23.1	12 23.1 12 23.1 12 23.1 12 23.1	625 12 23.1 626 12 23.1 627 12 23.1	622 12 23.1 623 12 23.1 624 12 23.1	619 12 23.1 620 12 23.1 621 12 23.1	616 12 23.1 617 12 23.1 618 12 23.1	612 12 23.1 613 12 23.1 614 12 23.1 615 12 23.1
677 12 23.1 1059 4 US-09-252- 678 12 23.1 1062 4 US-09-252- 679 12 23.1 1062 4 US-09-252- 680 12 23.1 1070 4 US-09-443- 681 12 23.1 1071 4 US-09-328- 682 12 23.1 1074 4 US-09-328- 683 12 23.1 1074 4 US-09-170- 684 12 23.1 1074 4 US-09-170-	672 12 23.1 1047 2 US-08-494- 673 12 23.1 1047 5 PCT-US96-1 673 12 23.1 1050 3 US-08-681- 674 12 23.1 1050 4 US-09-252- 675 12 23.1 1050 4 US-09-252- 676 12 23.1 1059 3 US-09-102-	667 12 23.1 1041 4 US-09-252- 668 12 23.1 1044 4 US-09-252- 669 12 23.1 1044 4 US-09-391- 669 12 23.1 1045 4 US-09-391- 670 12 23.1 1045 4 US-09-391- 671 12 23.1 1045 4 US-09-391-	662 12 23.1 1017 4 US-09-252- 663 12 23.1 1020 4 US-09-252- 664 12 23.1 1023 4 US-09-252- 665 12 23.1 1023 4 US-09-252- 666 12 23.1 1026 4 US-09-253-	659 12 23.1 1002 4 US-09-252- 660 12 23.1 1005 4 US-09-252- 661 12 23.1 1014 4 US-09-252-	655 12 23.1 987 4 US 09-252- 656 12 23.1 992 4 US-09-221- 657 12 23.1 993 4 US-09-252-	651 12 23.1 981 4 US-09-252- 652 12 23.1 981 4 US-09-252- 653 12 23.1 984 4 US-09-252- 654 12 23.1 986 4 US-09-641-	647 12 23.1 969 4 US-09-252- 648 12 23.1 972 4 US-09-252- 649 12 23.1 972 4 US-09-252- 650 12 23.1 978 4 US-09-252-	646 12 23.1 953 4 US-U9-258-7 646 12 23.1 957 4 US-U9-252-9 646 12 23.1 957 4 US-U9-252-9 646 12 23.1 963 4 US-U9-252-9	649 12 23.1 955 1 US-08-735- 640 12 23.1 955 2 US-09-105- 641 12 23.1 955 3 US-09-304- 642 12 23.1 955 4 US-09-399-	636 12 23.1 951 4 US-09-252-9 637 12 23.1 954 4 US-09-252-9 638 12 23.1 954 4 US-09-252-9	632 12 23.1 933 4 US-09-199-6 633 12 23.1 936 4 US-09-252-9 634 12 23.1 939 4 US-09-252-9 634 12 23.1 939 4 US-08-252-8	12 23.1 915 4 US-09-252-9 12 23.1 921 4 US-09-252-9 12 23.1 921 4 US-09-252-9	625 12 23.1 903 4 US-09-252-9 626 12 23.1 909 4 US-09-252-9 627 12 23.1 909 4 US-09-252-9 627 12 23.1 909 4 US-09-242-0	622 12 23.1 897 4 US-09-252-9 623 12 23.1 900 4 US-09-252-9 624 12 23.1 900 4 US-09-252-9	619 12 23.1 891 4 US-09-252-9 620 12 23.1 891 4 US-09-252-9 621 12 23.1 894 1 US-08-454-7	616 12 23.1 885 4 US-09-252-9 617 12 23.1 891 4 US-09-252-9 618 12 23.1 891 4 US-09-252-9	612 12 23.1 876 4 US-09-252-9 613 12 23.1 878 2 US-08-827-2 614 12 23.1 882 4 US-09-252-5 615 12 23.1 885 4 US-09-252-5

											a		0.0	0			a																			
0 75 75 75 75 75 75 75 75 75 75	7 7 7 7	C 747	1 7 2	7.7	742	740	738 739	736 737	735	733	731	730	172	726	724	722 723	720	718 719		c 714 c 715	712 713	c 710	709	707	c 705	c 703 704	70	c 700	69	C 696	000	C 693	69	690	680	0 687
12222	7772	1212	122	122	12	1 12	12	12	12	112	12	12	122	12	12	12	12	12	12	12 12	12 12	12	12	12	122	12 12	12	12	12	12	12	12	12	12	12	12:
23.1	ωω ,	u	. ω u	, ω ω	ωı	υ w :		ωω		υ (w	ω.	. ω <i>ι</i>	ω.	<u>ω</u> ω	ωω.		. u		ωω.	ωω			ω.	υ ω	ω.ω	23.1	23.1	23.1	23.1 23.1	23.1	23.1	23.1	23.1	23.1	23.1
1269 1270 1272 1272																									25		14	14	ا درا د	13	2 2 1	11	11			
بمممي																																				
US-09-252-991A-3750 US-09-016-434-756 US-09-252-991A-1552 US-09-252-991A-1552 US-09-096-776B-4	-09-232-828B-11 -08-532-828B-12 -08-532-828B-12	-08-305-172B-3 -09-252-991A-6674 -09-252-991A-1428	-09-252-991A+15 -09-328-352-921	-09-252-991A-305 -09-252-991A-1027	-09-252-991A-10	-09-252-991A-	-09-252-991A- -09-762-861B-	-09-762-861B- -09-506-286B-	-09-762-861B-	-09-506-286B-22	-09-252-991A-135 -09-252-991A-165	-09-252-991A-1052	-09-252-	-08-860-519-7	-09-252-991A-51 -09-252-991A-64	-09-252-991A-801 -09-252-991A-332	-09-762-861B-25 -09-252-991A-27	-09-506-286B-2 -09-762-861B-2	-08-860-368B-1 -09-506-286B-2	-08-860-368B-11 -08-860-368B-12	-09-252-991A-563 -09-252-991A-139	-09-252-991A-310	-09-252-	·09-252-991A-5001	-09-252-991A-116 -09-252-991A-116	-09-252-991A-16 -09-163-951-15	-09-252-991A-5/4 -09-221-017B-944	-09-252-	.09-252-991A-969	·09-252-991A-1405	-09-252-991A-123	-09-252-991A-110	09-252-991A-882	.09-252-991A-1551	09-252-	.09-252-991A-1434
- In (D -) O		160	10 10	10 10		, ,, ,		10 10			V 10	10 10	15 (6				25,	2 25		12,1	1393	3943	1501	5001	1160	1656	944	5332	9699	6825	1234	1101	8823	1551	1011	1434
		, # G	. H	ซ์ซ	PΥ	40	- D	22	22	Έ,	> >	Þΰ	שׁיׁל	j., 7	י סׁיכֿ	, <u>a, ç</u>	3 2 3	2 2	1991	22	ÞÓ	ซ์ซ์	/8, A	יטֿילי	5 ≯	ř-6	ซีซี	ซ์ซ์	י סיי	Óν	ייעי	5 ≫	ďβ	<u>-</u> >	>)	> D F
1 A G G G G G G G G G G G G G G G G G G	, ĭ ĭ Þ Þ																-																			
	·		0 0	0.0			200	.	ი ი	0.0	. n	იი	0.0		C		793	791	789		c 785 786		781 782		C 778		774	c 773	c 771	769						c 760
C 826 C 827 C 828	C 822 823 824	c 820	C 818	C 816 1 C 817 1	C 814	0 813	C 811	c 809 1	c 807	0.000	C 804	c 802	C 800	799	c 797	795 796			789 1	787 1	785 1 786 1	783 1		780 1	778 1 779 1	776 · 1 777 1		773	771	—	768	766 1	765	763 1	762	760
C 825 12 23. C 827 12 23. C 828 12 23. C 829 12 23. C 829 12 23.	C 822 12 23. 823 12 23. 824 12 23. 23. 23. 23. 23. 23. 23. 23. 23. 23	c 820 12 23.	C 818 12 23. C 819 12 23.	c 816 12 23. c 817 12 23.	C 814 12 23. C 815 12 23.	C 813 12 23.	C 811 12 23.	C 809 12 23.	C 807 12 23.	C 806 12 23.	C 804 12	C 802 12 c 803 12	C 800 12	799 12	C 797 12	795 12 796 12	122	12	789 12	787 12 788 12	785 12 786 12 1	783 12 784 12 12 12 12 12 12 12 12 12 12 12 12 12	12	780 12	778 12 23.	776 ·12 23.	12 23. 12 23.	773 12 23.	771 12 23.	12 23.	768 12 23.	766 12 23.	765 12 23.	763 12 23.	762 12 23.	760 12
C 825 12 23.1 1368 C 826 12 23.1 1368 C 827 12 23.1 1368 C 828 12 23.1 1368 C 829 12 23.1 1368	C 822 12 23.1 1368 823 12 23.1 1368 824 12 23.1 1368	c 820 12 23.1 1368 c 821 12 23.1 1368	C 818 12 23.1 1368 C 819 12 23.1 1368	C 816 12 23.1 1368 C 817 12 23.1 1368	C 814 12 23.1 1368 C 815 12 23.1 1368	C 813 12 23.1 1368	C 811 12 23.1 1368	C 809 12 23.1 1368 C 810 12 23.1 1368	C 807 12 23.1 1368 C 808 12 23.1 1368	C 806 12 23.1 1368	C 804 12 23.1 1368	C 802 12 23.1 1365 C 803 12 23.1 1366	c 800 12 23.1 1362 c 801 12 23.1 1365	799 12 23.1 1359	c 797 12 23.1 1356	795 12 23.1 1356 796 12 23.1 1356	12 23.1 1352	12 23.1 1348	789 12 23.1 1338 790 12 23.1 1348	787 12 23.1 1338 788 12 23.1 1338	785 12 23.1 1335 786 12 23.1 1335	783 12 23.1 1329 784 12 23.1 1335	12 23.1 1317 12 23.1 1326	780 12 23.1 1317	778 12 23.1 1314 779 13 33 1 1314	776 ·12 23.1 1308 777 12 23.1 1311	12 23.1 1305 12 23.1 1308	773 12 23.1 1305	771 12 23.1 1301	12 23.1 1290 12 23.1 1293	768 12 23.1 1290	766 12 23.1 1289 767 12 23.1 1290	765 12 23.1 1287	763 12 23.1 1287 764 12 23.1 1287	762 12 23.1 1282	760 12 23.1 1282
C 825 12 23.1 1368 4 C 826 12 23.1 1368 4 C 827 12 23.1 1368 5 C 828 12 23.1 1368 5 C 829 12 23.1 1368 5	C 822 12 23.1 1368 4 823 12 23.1 1368 4 12 23.1 1368 4 12 23.1 1368 4	C 820 12 23.1 1368 4 C 821 12 23.1 1368 4	C 818 12 23.1 1368 4 C 819 12 23.1 1368 4	C 816 12 23.1 1368 3 C 817 12 23.1 1368 3	C 814 12 23.1 1368 3 C 815 12 23.1 1368 3	C 813 12 23.1 1368 2	C 811 12 23.1 1368 2	C 809 12 23.1 1368 1 C 810 12 23.1 1368 1	C 807 12 23.1 1368 1 C 808 12 23.1 1368 1	C 806 12 23.1 1368 1	C 804 12 23.1 1368 1	C 802 12 23.1 1365 4 C 803 12 23.1 1366 4	C 800 12 23.1 1362 4 C 801 12 23.1 1365 4	799 12 23.1 1359 4	C 797 12 23.1 1356 4	795 12 23.1 1356 4 796 12 23 1 1356 4	12 23.1 1352 5	12 23.1 1348 4	789 12 23.1 1338 4 790 12 23.1 1348 3	787 12 23.1 1338 4 788 12 23.1 1338 4	785 12 23.1 1335 4 786 12 23.1 1335 4	783 12 23.1 1329 1 784 12 23.1 1335 2	12 23.1 1317 4 12 23.1 1326 4	780 12 23.1 1317 4	778 12 23.1 1314 4	776 ·12 23.1 1308 4 777 12 23.1 1311 4	12 23.1 1305 4 12 23.1 1308 4	773 12 23.1 1305 4	771 12 23.1 1301 2	12 23.1 1290 4 12 23.1 1293 4	768 12 23.1 1290 4	766 12 23.1 1289 2	765 12 23.1 1287 4	763 12 23.1 1287 4	762 12 23.1 1282 4	760 12 23.1 1282 2
C 825 12 23.1 1368 4 US-09 C 826 12 23.1 1368 4 US-09 C 827 12 23.1 1368 5 PCT-U C 828 12 23.1 1368 5 PCT-U C 829 12 23.1 1368 5 PCT-U	C 822 12 23.1 1368 4 US-09 823 12 23.1 1368 4 US-09 824 12 23.1 1368 4	C 820 12 23.1 1368 4 US-08 C 821 12 23.1 1368 4 US-08	C 818 12 23.1 1368 4 US-09 C 819 12 23.1 1368 4 US-08	c 816 12 23.1 1368 3 US-08 c 817 12 23.1 1368 3 US-08	C 814 12 23.1 1368 3 US-08	C 813 12 23.1 1368 2 US-08	C 811 12 23.1 1368 2 US-08	C 809 12 23.1 1368 1 US-08	C 807 12 23.1 1368 1 US-08	C 806 12 23.1 1368 1 US-08	C 804 12 23.1 1368 1 US-08	C 802 12 23.1 1365 4 US-09 C 803 12 23.1 1366 4 US-09	C 800 12 23.1 1362 4 US-09 C 801 12 23.1 1365 4 US-09	799 12 23.1 1359 4 US-09	C 797 12 23.1 1356 4 US-09	795 12 23.1 1356 4 US-09	12 23.1 1352 5 PCT-U	12 23.1 1348 4 US-09	789 12 23.1 1338 4 US-09	787 12 23.1 1338 4 US-09 788 12 23.1 1338 4 US-09	785 12 23.1 1335 4 US-09 786 12 23.1 1335 4 US-09	783 12 23.1 1329 1 US-08	12 23.1 1317 4 US-09 12 23.1 1326 4 US-09	780 12 23.1 1317 4 US-09	778 12 23.1 1314 4 US-09	776 ·12 23.1 1308 4 US-09 777 12 23.1 1311 4 US-09	12 23.1 1305 4 US-09 12 23.1 1308 4 US-09	773 12 23.1 1305 4 US-09	771 12 23.1 1301 2 US-08	12 23.1 1290 4 US-09 12 23.1 1293 4 US-09	768 12 23.1 1290 4 US-09	766 12 23.1 1289 2 US-08	765 12 23.1 1287 4 US-09	763 12 23.1 1287 4 US-09	762 12 23.1 1282 4 US-09	760 12 23.1 1282 2 US-08
790, Ap C 825 12 23.1 1368 4 US-09-252-991A-8408 1750, Ap C 826 12 23.1 1368 4 US-09-252-991A-16040 16. App C 827 12 23.1 1368 5 PCT-US93-07190-24 1752, Ap C 828 12 23.1 1368 5 PCT-US93-07231-24 1752, Ap C 829 12 23.1 1368 5 PCT-US93-08742-24	C 822 12 23.1 1368 4 US-09-252-991A 823 12 23.1 1368 4 US-09-252-991A 824 12 23.1 1368 4 US-09-252-991A	C 820 12 23.1 1368 4 US-08-456-033-24 C 821 12 23.1 1368 4 US-08-643-321-23 C 821 12 23.1 1368 4 US-08-643-321-23	C 818 12 23.1 1368 4 US-09-170-936- C 819 12 23.1 1368 4 US-08-461-113-	C 816 12 23.1 1368 3 US-08-480-515A C 817 12 23.1 1368 3 US-08-271-556A	C 814 12 23.1 1368 3 US-08-278-730A C 815 12 23.1 1368 3 US-08-445-467-	C 813 12 23.1 1368 2 US-08-912-088-	C 811 12 23.1 1368 2 US-08-445-468A	c 809 12 23.1 1368 1 US-08-462-623- c 810 12 23.1 1368 1 US-08-451-953A	c 807 12 23.1 1368 1 US-08-643-563A c 808 12 23.1 1368 1 US-08-643-763A	C 806 12 23.1 1368 1 US-08-105-131-31-31-31-31-31-31-31-31-31-31-31-31	C 804 12 23.1 1368 1 US-08-278-729A	c 802 12 23.1 1365 4 US-09-252-991A-82 c 803 12 23.1 1366 4 US-09-280-116-120	C 800 12 23.1 1362 4 US-09-470-512A-6 C 801 12 23.1 1365 4 US-09-252-991A-882	799 12 23.1 1359 4 US-09-312-283C	C 797 12 23.1 1356 4 US-09-252-991A-141	795 12 23.1 1356 4 US-09-252-991A-630	12 23.1 1352 5 PCT-US22-02091-73	12 23.1 1348 4 US-09-312-283C	789 12 23.1 1338 4 US-09-152-991A-14 790 12 23.1 1348 3 US-09-188-990-252	787 12 23.1 1338 4 US-09-252-991A-7783	785 12 23.1 1335 4 US-09-252-991A 786 12 23.1 1335 4 US-09-252-991A	783 12 23.1 1329 1 US-08-716-301-1 784 12 23.1 1335 2 US-08-743-637B-18	12 23.1 1317 4 US-09 12 23.1 1326 4 US-09	780 12 23.1 1317 4 US-09-252-991A-779	778 12 23.1 1314 4 US-09-252-991A-7168	776 ·12 23.1 1308 4 US-09-252-991A-13 777 12 23.1 1311 4 US-09-252-991A-11	12 23.1 1305 4 US-09-252-991A-1176 12 23.1 1308 4 US-09-252-991A-1239	773 12 23.1 1305 4 US-09-252-991A-8472	771 12 23.1 1301 2 US-08-641-314C-1	12 23.1 1290 4 US-09-252-991A-16 12 23.1 1293 4 US-09-252-991A-16	768 12 23.1 1290 4 US-09-252-991A-9349	766 12 23.1 1289 2 US-08-344-833-1	765 12 23.1 1287 4 US-09	763 12 23.1 1287 4 US-09-054-680-1	762 12 23.1 1282 4 US-09	760 12 23.1 1282 2 US-08
C 825 12 23.1 1368 4 US-09-252-991A-8008 C 826 12 23.1 80 4 US-09-252-991A-1600 C 827 12 23.1 1368 5 PCT-US93-07190-24 C 828 12 23.1 1368 5 PCT-US93-07231-24 C 829 12 23.1 1368 5 PCT-US93-08742-24	C 822 12 23.1 1368 4 US-09-252-991A-1810 823 12 23.1 1368 4 US-09-252-991A-5583 824 12 23.1 1368 4 US-09-252-991A-8408	C 820 12 23.1 1368 4 US-08-456-033-24 C 821 12 23.1 1368 4 US-08-643-321-23	C 818 12 23.1 1368 4 US-09-170-936-24 C 819 12 23.1 1368 4 US-08-461-113-24	c 816 12 23.1 1368 3 US-08-480-515A-24 c 817 12 23.1 1368 3 US-08-271-556A-1	C 814 12 23.1 1368 3 US-08-278-730A-24 C 815 12 23.1 1368 3 US-08-445-467-24	C 813 12 23.1 1368 2 US-08-912-088-24	C 811 12 23.1 1368 2 US-08-445-468A-24	c 809 12 23.1 1368 1 US-08-462-623-24 c 810 12 23.1 1368 1 US-08-451-953A-24	C 807 12 23.1 1368 1 US-08-643-563A-24 C 808 12 23.1 1368 1 US-08-643-763A-24	C 806 12 23.1 1368 1 US-08-406-672-24	C 804 12 23.1 1368 1 US-08-278-729A-24	C 802 12 23.1 1365 4 US-09-252-991A-8265 C 803 12 23.1 1366 4 US-09-280-116-120	C 800 12 23.1 1362 4 US-09-470-512A-6 C 801 12 23.1 1365 4 US-09-252-991A-882	799 12 23.1 1359 4 US-09-312-283C-34	C 797 12 23.1 1356 4 US-09-252-991A-14188	795 12 23.1 1356 4 US-09-252-991A-630	12 23.1 1352 5 PCT-US92-02091-7	12 23.1 1348 4 US-09-312-283C-227	789 12 23.1 1338 4 US-09-2525-991A-14144 789 12 23.1 1348 3 US-09-188-930-227	787 12 23.1 1338 4 US-09-252-991A-7783 788 12 23.1 1338 4 US-09-252-991A-7783	785 12 23.1 1335 4 US-09-252-991A-5087 786 12 23.1 1335 4 US-09-252-991A-16196	783 12 23.1 1329 1 US-08-716-301-1 784 12 23.1 1335 2 US-08-743-637B-182	12 23.1 1317 4 US-09-252-991A-9952 12 23.1 1326 4 US-09-252-991A-2299	780 12 23.1 1317 4 US-09-252-991A-779	778 12 23.1 1314 4 US-09-252-991A-7168	776 ·12 23.1 1308 4 US-09-252-991A-13991 777 12 23.1 1311 4 US-09-252-991A-11984	12 23.1 1305 4 US-09-252-991A-11762 12 23.1 1308 4 US-09-252-991A-12391	773 12 23.1 1305 4 US-09-252-991A-8472	771 12 23.1 1301 2 US-08-641-314C-1	12	768 12 23.1 1290 4 US-09-252-991A-9349	766 12 23.1 1289 2 US-08-344-833-1	765 12 23.1 1287 4 US-09-252-991A-3628	763 12 23.1 1287 4 US-09-054-680-1	762 12 23.1 1282 4 US-09-016-434-953 Sequence	760 12 23.1 1282 2 US-03-78-989-12 Sequen

C C 9000 C C 9000 C C 9000 G C 9000	C C C C C C C C C C C C C C C C C C C		C 883		C 877	874 875 876		c 870	866 867	C 863		C 859	C 855	855 853 854	851 851 850	C 848	846 847	844 845	842 843	840 841	838 839	C 836	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1222222	12221	3222	1222	1222	122	12 12	12	12	1121	122	555	12	12	12	322	12	12 12	12 12	12 12	12 12	12 12	12	1122
23.1123.1123.1123.1123.11			$\omega \omega \omega$		23.1	23.1 23.1 23.1	23.1	23.1	33.1	23.1	22.21	23.1	23.1 23.1	23.1	23.1	23.1	23.1 23.1	23.1 23.1	23.1 23.1	23.1 23.1	23.1 23.1	23.1	23.1
1524 1527 1527 1528 1528 1531 1533 4 1534 4 1534 4 1534 4	24 21 8 24 24 24 24 24 24 24 24 24 24 24 24 24	8 6 5 5 5	1100	0 0 0 0	4 6 5	9188	82	70	0 0 4 4	200	000	4 4 8 6 4 8	19	19	19	07	20	05	2 2	04	95	74	- 4 4 4 6
US-09-130-337A-24 US-09-130-337A-24 US-09-252-991A-7133 US-09-264-344-1448 US-08-630-915A-21 US-09-252-991A-16513 US-09-298-731-7 US-09-298-731-7 US-09-399-913-9	US-09-252 US-09-658 US-09-252 US-08-716 US-08-840	US-08-99-637A-171 US-09-199-637A-171 US-09-252-991A-171 US-08-976-063E-21 US-08-976-063E-21	US-08-479-939 US-08-483-433 US-08-809-763	US-09-252 US-09-252 US-09-252 US-08-361	US-09-252-991A-154 US-09-252-991A-924	US-09-252-991 US-09-252-991 US-09-252-991	US-09-252-99: US-09-252-99: US-09-291-92:	US-09-252-991A-896 US-09-252-991A-3239	US-08-824-70' US-09-252-99'	US-09-252-991A-338 US-09-252-991A-338 US-09-620-312D-408	US-09-252-991A-3558 US-09-252-991A-7573	US-09-252-991A- US-09-252-991A- US-09-252-991A-	US-09-059-958-1 US-09-252-991A-843	US-08-482 US-09-211	US-08-103	US-09-252 US-09-252	US-08-682-847-5 US-09-063-676-1	US-09-252-991A-142 US-08-035-558-3	US-09-252-991A-9209 US-09-252-991A-1229	US-07-984 US-08-458	US-09-252-991A-926 US-08-447-965A-1	US-09-252 US-09-252	VS-08-910-731-7 US-08-910-731-7 US-08-795-395-1
, Appl 133, A 133, A 448, A 1, App 6513, Appl Appl	12883, 1, Appl 2479, 2 247, App	171, App. 171, Ap 1138, Ap 21, App. 21, App. 21, App. 2166	26, App 26, App 3, Appl		15431, 9248, A	9 421, Ap 9 5798, Ap 9 786, Ap		896, Ap	1, Appl		3558, A	8370, A 3351, A	1, Appl 8433, A			10 10	s, Appl		9209, A	1, Appl		881, Ap	1, Appl
	. ⊢ vi	ነ ተያያ																					
C 968 970 971 C 972 973 974 975		99999	ហេសស	липи	ហេស	44	44	9 9 9		999		ווו נוו נו	991	ACAC	NN	NA	\sim		91		-	-00	0000
9999996 99999999	9654 1	959 960 962	5676	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	50 1	47 48 1	944 945 1 946	942 1	939	935 936 937 1	333	30	928 1 929	926	923	921 1	19 1 20 1	917 1 918 1	915 916	913 1 914 1	11 1 12 1	909	905
968 970 971 972 973 973 974 1	964 12 23 1 965 12 23 1 966 12 23 1 967 12 23 1 20 20 20 20 20 20 20 20 20 20 20 20 20	959 12 23 960 12 23 961 12 23 12 23 23 23 23 23 23 23 23 23 23 23 23 23	56 12 23. 57 12 23. 58 12 23.	52 12 23. 53 12 23. 54 12 23.	50 12 23. 51 12 23.	47 12 23. 48 12 23. 49 12 23.	944 12 23. 945 12 23. 946 12 23.	941 12 23. 942 12 23. 943 12 23.	938 12 23. 939 12 23. 940 12 23.	935 12 23. 936 12 23. 937 12 23.	33 12 23 34 12 23	30 12 23. 31 12 23.	928 12 23 929 12 23	925 12 23. 926 12 23.	923 12 23. 924 12 23.	921 12 23 922 12 23	19 12 23. 20 12 23.	917 12 23. 918 12 23.	915 12 23. 916 12 23.	913 12 23. 914 12 23.	11 12 23. 12 12 23.	909 12 23. 910 12 23.	904 12 23 905 12 23 906 12 23 907 12 23
968 12 23.1 1645 969 12 23.1 1647 970 12 23.1 1647 971 12 23.1 1647 972 12 23.1 1659 973 12 23.1 1659 974 12 23.1 1659 976 12 23.1 1659 976 12 23.1 1659 976 12 23.1 1659	965 12 23.1 1643 965 12 23.1 1643 967 12 23.1 1643 967 12 23.1 1643	959 12 23.1 1643 960 12 23.1 1643 961 12 23.1 1643 962 12 23.1 1643	56 12 23.1 1643 57 12 23.1 1643 58 12 23.1 1643	52 12 23.1 1643 53 12 23.1 1643 54 12 23.1 1643 55 12 23.1 1643	50 12 23.1 1643 51 12 23.1 1643	47 12 23.1 1643 48 12 23.1 1643 49 12 23.1 1643	944 12 23.1 1639 945 12 23.1 1643 946 12 23.1 1643	941 12 23.1 1626 942 12 23.1 1638 943 12 23.1 1638	938 12 23.1 1617 939 12 23.1 1620 940 12 23.1 1620	935 12 23.1 1616 936 12 23.1 1616 937 12 23.1 1616	33 12 23.1 1614 34 12 23.1 1616	30 12 23.1 1599 31 12 23.1 1608 32 13 23 1 1611	928 12 23.1 1596 929 12 23.1 1596	925 12 23.1 1581 926 12 23.1 1590 927 12 23 1 1594	923 12 23.1 1578 924 12 23.1 1581	921 12 23.1 1569 922 12 23.1 1578	19 12 23.1 1563 20 12 23.1 1566	917 12 23.1 1560 918 12 23.1 1560	915 12 23.1 1556 916 12 23.1 1560	913 12 23.1 1551 914 12 23.1 1554	11 12 23.1 1550 12 12 23.1 1550	909 12 23.1 1548 909 12 23.1 1548 910 12 23.1 1548	904 12 23.1 1540 905 12 23.1 1542 906 12 23.1 1542 907 12 23.1 1548
968 12 23.1 164 970 12 23.1 164 970 12 23.1 164 971 12 23.1 164 972 12 23.1 165 973 12 23.1 165 974 12 23.1 165 975 12 23.1 165 976 12 23.1 165	964 12 23.1 1643 3 US-08-852-1 965 12 23.1 1643 3 US-08-985-1 1 965 12 23.1 1643 3 US-08-985-1 966 12 23.1 1643 3 US-08-985-1 967 12 23.1 1643 3 US-08-985-1 967 12 23.1 1643 3 US-08-985-1	959 12 23.1 1643 3 US-08-985-960 12 23.1 1643 3 US-08-985-961 12 23.1 1643 3 US-08-9852-12 23.1 1643 3 US-08-852-12 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643 23.1 1643	56 12 23.1 1643 2 US-08-967- 58 12 23.1 1643 2 US-08-967- 59 12 23.1 1643 2 US-08-967-	52 12 23.1 1643 1 US-08-700- 53 12 23.1 1643 1 US-08-700- 54 12 23.1 1643 1 US-08-670- 54 12 23.1 1643 2 US-08-506-	50 12 23.1 1643 1 US-08-532-1 51 12 23.1 1643 1 US-08-700	47 12 23.1 1643 1 US-08-532-148 12 23.1 1643 1 US-08-532-149 12 23.1 1643 1 US-08-532-149	944 12 23.1 1639 4 US-09-620-312D-317 945 12 23.1 1643 1 US-08-532-828B-1 946 12 23.1 1643 1 US-08-532-828B-2	941 12 23.1 1626 4 US-09-252-991A-165 942 12 23.1 1638 4 US-09-252-991A-123 943 12 23.1 1638 4 US-09-252-991A-155	939 12 23.1 1620 4 US-09-252-991A-17508 939 12 23.1 1620 4 US-09-252-991A-2743 940 12 23.1 1620 4 US-09-252-991A-1468	935 12 23.1 1616 4 US-08-818-111-107 936 12 23.1 1616 4 US-09-056-556-112 937 12 23.1 1616 4 US-09-072-596-107	33 12 23.1 1614 4 US-09-252-991A-1548 33 12 23.1 1614 4 US-09-252-991A-154 34 12 23.1 1616 3 US-08-818-112-112	30 12 23.1 1599 4 US-09-252-991A-5468 31 12 23.1 1608 4 US-09-252-991A-1540 32 13 1611 4 US-09-252-991A-1540	928 12 23.1 1596 4 US-09-252-991A-593 929 12 23.1 1596 4 US-09-252-991A-110	925 12 23.1 1581 3 US-U9-2320- 926 12 23.1 1590 4 US-09-252- 927 12 23.1 1594 2 US-08-055-	923 12 23.1 1578 4 US-09-252-991A-15 924 12 23.1 1581 2 US-08-762-106-6	921 12 23.1 1569 4 US-09-252-991A-5425 922 12 23.1 1578 4 US-09-252-991A-1097	19 12 23.1 1563 4 US-09-252-991A-12 20 12 23.1 1566 4 US-09-252-991A-92	917 12 23.1 1560 4 US-09-252-991A-7367 918 12 23.1 1560 4 US-09-252-991A-1177	915 12 23.1 1556 3 US-09-334-601-7 916 12 23.1 1560 2 US-08-709-979A-2	913 12 23.1 1551 4 US-09-252- 914 12 23.1 1554 4 US-09-252-	11 12 23.1 1550 2 US-08-609-443B-17 12 12 23.1 1550 4 US-08-851-896-17	909 12 23.1 1548 4 US-09-252-1 910 12 23.1 1548 4 US-09-252-1	904 12 23.1 1540 4 US-09-252- 905 12 23.1 1542 4 US-09-252- 906 12 23.1 1542 4 US-09-252- 907 12 23.1 1548 2 US-08-762-

0 0 0 0

იი

00000

იი

0

```
RESULT 1
US-09-252-991A-13272/c
US-09-252-991A-13727, Application US/09252991A
Patent No. 135775;
Patent No. 1555775;
                                                                                                                                                                                                                                                 RESULT 2
US-09-252-991A-13107/c
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: DNA
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-13272
Sequence 13107, Application US/09252991A
Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US/074,788
PRIOR APPLICATION NUMBER: US/074,788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:

APPLICANT: MATC J. Rubenfield et al.

APPLICANT: MATC J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 13272

LENGTH: 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   988
988
990
990
995
995
                                                                                                                                                                                                                                                                                                                                             381
                                                                                                                                                                                                                                                                                                                                           l Similarity
20; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11668
11677
11677
11677
11677
11683
11683
11692
11698
11700
11700
11700
11700
11707
11723
11723
11723
11734
11734
                                                                                                                                                                                                                                                                                                                                                                                                                                                    38.5%; Score 20; DB 4; Length 732; 100.0%; Pred. No. 0.068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-252-991A-6747
US-09-252-991A-1158
US-09-252-991A-1158
US-09-252-991A-7219
US-09-252-991A-7219
US-09-252-991A-14477
US-09-252-991A-3551
US-09-252-991A-3551
US-08-860-519-6
US-09-252-991A-7927
US-09-252-991A-7927
US-08-860-519-6
US-09-252-991A-9057
US-08-241-766-1
US-09-252-991A-9057
US-09-385-259-1
US-09-385-259-1
US-09-385-259-1
US-09-252-991A-9061
US-09-252-991A-9061
US-09-252-991A-9061
US-09-252-991A-9061
                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-252-991A-5894
US-09-199-637A-276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-252-991A-12163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5, Appli
7927, Ap
10, Appl
10, Appl
20, Appli
2, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appl
1, Appl
2, Appli
2, Appli
2, Appli
2, Appli
3, Appli
4, Appli
5, Appli
6, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12163, A
2894, Ap
27894, Ap
2747, Ap
6747, Ap
6977, Ap
11588, Ap
7219, Ap
14477, A
3551, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                 GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO F

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO F

TILE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 3602

TYPE: DNA

CORGANISM: Pseudomonas aeruginosa

US-09-252-991A-3602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR TILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 3647
LENGTH: 810
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-252-991A-3647/c

; Sequence 3647, Application US/09252991A

; Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-252-991A-3602/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-252-991A-13107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 13107
LENGTH: 1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3602, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
Matches
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            634 credrederecedecrede 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33 cecrecceccreec 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28 CTCGTCGCTGCCGGCCTCGC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Similarity 100.0%; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38.5%; but
100.0%; Pr
30.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 16; DB; Pred. No. 7.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 20;
Pred. No.
  Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4;
0.066;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
7.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 810;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1056;
                  Length 879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                     겅
```

S

PSEUDOMONAS

```
밁
                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                     US-09-252-991A-2686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-252-991A-2993/c
; Sequence 2993, Application US/09252991A
; Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                    US-09-252-991A-2993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-09-252-991A-3859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-3859
Sequence 2686, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 2993
                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 3859
LENGTH: 1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3859, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERIGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 6
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                      LENGTH: 2673
                                                                                                                                                                                       Local Similarity
les 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1353 CGCTGCCGGCCTCGCC 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         338 cécrécéédecrédec 323
                                                                                                                                     25 GCTCTCGTCGCTGCCG 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33 CGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33 CGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                     30.8%; ilarity 100.0%; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 60/094,190
                                                                                                                                                                                       0
                                                                                                                                                                                                      Score 16; DB 4; Pred. No. 7.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                      Length 2673;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1632;
                                                                                                                                                                                     Indels
                                                                                                                                                                                   ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PSEUDOMONAS
                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
Sequence 2875, Application US/09252991A

Patent No. 6551795

GENERAL INFORMATION:

APPLICANT: MATC J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/99/252,991A

CURRENT APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR FILING DATE: 1998-02-18

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NO.2875

LENGTH: 2814

TYPE: DNA

ORGANISM: PSeudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: MATC J. Rubenfield et al.
APPLICANT: MATC J. RUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS:
ITITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 2666
LENGTH: 2715
TYPE: DNA
ORGANISM: PSeudomonas aeruginosa
                                                                                                                                                                                                                                                                                     US-09-072-596-259/c
                                                                                                                                                                                                                                                                                                              RESULT 9
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
US-09-252-991A-2875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-252-991A-2686
                                                                                          GENERAL INFORMATION:
APPLICANT: Reed, St
APPLICANT: Reidy,
APPLICANT: Dillon,
APPLICANT: Campos-N
APPLICANT: Houghcor-N
APPLICANT: Vedvick,
                                                                                                                                                                                                                                               Sequence 259, Application US/09072596 Patent No. 6458366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
les 16; Conservat
                                                                                                                                                                                                                                                                                                                                                                             2710 GCTCTCGTCGCTGCCG 2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2652 GCTCTCGTCGCTGCCG 2667
         OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                      25 GCTCTCGTCGCTGCCG 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25 GCTCTCGTCGCTGCCG 40
Skeiky, Yasir A.W.
Skeiky, Yasir A.W.
Dillon, Davin C.
Campos-Neto, Antonia
Houghton, Raymond
Vedvick, Thomas S.
Twardzik, Daniel R.
Lodes, Michael J.
Hendrickson, Ronald C.
Hendrickson, Ronald C.
                                                                                                                                                                                                    Reed, Steven G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            30.8%; Score 16; DB 4;
100.0%; Pred. No. 7.2;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2814;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
      TUBERCULOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
В
                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                US-09-252-991A-15918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-252-991A-15918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-072-596-259
                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18 PRIOR APPLICATION NUMBER: US 60/074,788 PRIOR FILING DATE: 1998-02-18 PRIOR FILING DATE: 1998-02-18 PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27 NUMBER OF SEQ ID NOS: 33142 SEQ ID NO 15918
                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 15918, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 259:
SEQUENCE CHARACTERISTICS:
LENGTH: 423 base pairs
TYPE: nucleic acid
                                                                                                                                                                LENGTH: 438
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: MAKI, DAVId J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 210121.417C9
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 6300 Co
CITY: Seattle
STATE: Washing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0
FILING DATE: 05-MAY-1998
CLASSIFICATION:
                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
 136
                                    34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30 CGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26
                                                                         l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98104-7092
GCTGCCGGCCTCGCC 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: SEED and BERRY LLP 6300 Columbia Center,
                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                     28.8%; Score 15;
100.0%; Pred. No.
tive 0; Mismatcl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28.8%; Score 15; DB 4; 100.0%; Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/09/072,596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                701 Fifth Avenue
                                                                                        DB 4;
27;
                                                                                                          Length 438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>,,</u>
                                                                     Gaps
                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              °;
```

```
밁
                                     Ş
                                                                                                                                                       US-09-670-314-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
US-09-670-314-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-060-756-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-060-756-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/060,756
CURRENT FILING DATE: 1998-04-16
NUMBER OF SEQ ID NOS: 743
SOFTWARE: PATENTIN VEY. 2.0
SEQ ID NO 60
LENGTH: 448
                                                                           Matches
                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No. 6183957
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 60, Apr-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Cole, Stewart
APPLICANT: Buchrieser-Brosch, Roland
APPLICANT: Buchrieser-Brosch, Roland
APPLICANT: Billault, Alain
TITLE OF INVENTION: METHOD FOR ISOLATING A POLYNUCLEOTIDE OF INTEREST FROM
TITLE OF INVENTION: THE GENOME OF A MYCOBACTERIUM USING A BAC-BASED DNA
TITLE OF INVENTION: LIBRARY APPLICATION TO THE DETECTION OF MYCOBACTERIA
FILE REFERENCE: 3495-0169
                                                                                                                                                                                                                                                                                                                                         APPLICANT: Billault, Alain
TITLE OF INVENTION: METHOD FOR ISOLATING A POLYNUCLEOTIDE OF INTEREST FROM
TITLE OF INVENTION: THE GENOME OF A MYCOBACTERIUM USING A BAC-BASED DNA
TITLE OF INVENTION: LIBRARY APPLICATION TO THE DETECTION OF MYCOBACTERIA
FILLE REFERENCE: 3495-0169
CURRENT APPLICATION NUMBER: US/09/670,314
CURRENT FILING DATE: 2001-01-12
PRIOR FILING DATE: 1998-04-16
RIGHT FILING DATE: 1998-04-16
RIGHT FILING DATE: 1998-04-16
RIGHT FILING DATE: 1998-04-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Cole, Stewart
APPLICANT: Buchrieser-B
                                                                                                                                                         TENGTH: 448
TYPE: DNA
ORGANISM: Mycobacterium tuberculosis
FEATURE:
FEATURE:
NAME/KEY: unsure
LOCATION: (various positions within the sequence)
OTHER INFORMATION: applicants are uncertain of bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Mycobacterium tuberculosis
FEATURE:
NAME/KEY: unsure
LOCATION: (various positions within the sequence)
OTHER INFORMATION: applicants are uncertain of bases designated
                                                                                             ocal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 60, ...
10. 6492506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 352 TICTCTCACGCTCTC 366
                                                                         . Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7
                                 TTCTCTCACGCTCTC 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTCTCACGCTCTC 21
TTCTCTCACGCTCTC 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gordon, Stephen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09670314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/09060756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Buchrieser-Brosch, Roland
                                                                         Conservative
                                                                                       28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28.8%; Score 15;
100.0%; Pred. No.
                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                             DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 3;
                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                         Length 448;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 448
                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                   designated
                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ٥,
                                                                                                                                                                     as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        as
                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 199-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQUENCE: 1974
                                                                                                                                                          RESULT 15
US-09-252-991A-15804/c
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
US-09-252-991A-15774/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-15774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-252-991A-15888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-252-991A-15888
Sequence 15804, Application US/09252991A
PATENT NO. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: AUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ARRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15888
LENGTH: 762
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 15888, Appli
Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J.
                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 15774,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMD AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-07-27
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMD AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 885
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                        274 GCTGCCGGCCTCGCC 260
                                                                                                                                                                                                                                                                           34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09252991A
                                                                                                                                                                                                                                                                                                         28.8%; Su
100.0%; Pr
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                      Score 15; DB; Pred. No. 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 15; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
26;
                                                                                                                                                                                                                                                                                                                 ,,
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                    Length 885;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 762;
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

```
; LENGTH: 1068
; TYPE: DNA
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-15804
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 16
US-09-252-991A-10788/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
US-09-252-991A-10603
                                                                                                                                                                                                                                                                                                                                                                          US-09-252-991A-10603/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-252-991A-10788
                                                                                       Sequence 10603, Application US/09252991A
PATENT NO. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND ANINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
GENERAL INFORMATION: Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                      NUMBER OF SEQ ID NOS:
SEQ ID NO 10603
LENGTH: 1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 10788
LENGTH: 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 10788, Application US/09252991A
Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18
            ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
hes 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                           85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 GCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      écreccescercece 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.8%; Score 15;
100.0%; Pred. No.
live 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 4; Length 1119; 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1068;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                            PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                         RESULT 19
US-09-252-991A-10250
                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-620-312D-168/c
; Sequence 168, Application US/09620312D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 18
                                                                                                                                                                                                                                                                                                                US-09-620-312D-168
GENERAL INFORMATION:
APPLICANT: MATC J. Rubenfield et al.
APPLICANT: MATC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT APPLICATION NUMBER: US/09/252,991A
PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                             Sequence 10250, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 1105
SOFTWARE: pt_FL_genes Version 1.0
SEQ ID NO 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Drmanac, Radoje T.
TITLE OF INVENTION: No. 6569662el Nucleic Acids
TITLE OF INVENTION: Polypeptides
FILE REFERENCE: 784CIP2B
CURRENT APPLICATION NUMBER: US/09/620,312D
CURRENT FILING DATE: 2000-07-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
                                                                                                                                                                                                                                                                                                                          NAME/KEY: CDS
LOCATION: (96)..(548)
                                                                                                                                                                                                                                                                                                                                                                                                ENGTH: 1197
                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              735 GÉTGCCGGCCTCGCC 721
                                                                                                                                                                                                                           19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                         15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tang, Y. 10m
Liu, Chenghua
                                                                                                                                                                                                               CTCATCGCTCTCGTC 33
                                                                                                                                                                                                  CTCATCGCTCTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Asundi, v.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wang, Dunrui
Wang, Zhiwei
John Tillinghast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zhao, Qing A.
Wehrman, Tom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wang, Jian-Rui
Zhou, Ping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xue, Aidong J.
Yang, Yonghong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ren,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ma, Yunqing
                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Feiyan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rui-hong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vinod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.8%; 5--
100.0%; Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000-07-19
                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                                                                                   28.8%;
                                                                                                                                                                                                86
                                                                                                                                                                                                                                                                      Score 15; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 15; Pred. No.
                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 4;
25;
                                                                                                                                                                                                                                                                      DB 4;
25;
                                                                                                                                                                                                                                                       °,
                                                                                                                                                                                                                                                                                  Length 1197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                     TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                       0
```

```
; NUMBER OF SEQ ID NOS: 33142
; SEQ ID NO 10368
; LENGTH: 1620
; TYPE: DNA
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-10368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Marches 15; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-10250
                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-10368
                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-252-991A-11745/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-252-991A-11745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS:
SEQ ID NO 11745
LENGTH: 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 10250
LENGTH: 1260
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION: APPLICANT: Marc J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 11745, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                    Sequence 10368, Appearent No. 655179
                                                                                                                            APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1998-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,789

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR FILING DATE: 1998-07-27

NUMBER OF SECOLID NOC. 1998-07-27

NUMBER OF SECOLID NOC. 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28.8%; Score 15;
Local Similarity 100.0%; Pred. No.
les 15; Conservative 0; Mismatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              406 GCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        redrederecedece 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGTCGCTGCCGGCC 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         Application US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.8%; Score 15;
100.0%; Pred. No.
Live 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Length 1260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

Query Match

28.8%; Score 15;

DB 4;

Length 1620;

```
RESULT 24
US-09-252-991A-108/c
                                                                                                 밁
                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
; Sequence 108, Application US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                      US-09-252-991A-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-252-991A-113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-11887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-252-991A-11887/c
                                                                                                                                                                                                                                                              SEQ ID NO 113
LENGTH: 2553
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 113, Application US/09252991A
PATENT NO. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT APPLICATION NUMBER: US/09/252,791A
PRIOR APPLICATION NUMBER: US/074,788
PRIOR APPLICATION NUMBER: US/074,788
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION: RUBERFIELD & A. APPLICANT: MARC J. RUBERFIELD AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS TILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                           Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 11887
LENGTH: 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 11887, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 100.0%; In 105 15; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1266 GCTGCCGGCCTCGCC 1280
                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          273 TCGTCGCTGCCGGCC 259
                                                                                                                                    30 CGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                             CGTCGCTGCCGGCCT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGTCGCTGCCGGCC 43
                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                         28.8%; Score 15; DB 4; 100.0%; Pred. No. 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                         <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 25; 
, Mismatches
                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                             Length 2553;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1692
                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                              밁
```

```
; LENGTH: 2664
; TYPE: DNA
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-108
                                              5183745-1
                                                                                               HIOLOGICAL USES
NUMBER OF SEQUENCES: 13
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/
FILING DATE: 25-OCT-1989
                                                                                                                                                                                                                                                                  5183745-1/c
;Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 25
US-09-586-719-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                  ;Patent No. 5183745
APPLICANT: DANCHIN, ANTOINE;GLASER, PHILLIPPE;KRIN, EVELYN;
;BARZU, OCTAVIEN;LADANT, DANIEL;ULLMAN, AGNES
;TITLE OF INVENTION: ADENYL CYCLASE DERIVATIVES AND THEIR
                                                                                                                                                                                                                                                                                                          RESULT 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-586-719-11
                                                                                  SEQ ID NO:1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 11

LENGTH: 419

TYPE: DNA

ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 11, Applia Patent No. 6294345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS:
SEQ ID NO 108
    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Zheng, Feng
APPLICANT: Levin, Joshua Z.
APPLICANT: Bauer, Michael W.
TITLE OF INVENTION: Herbicide Target Genes and Methods
FILE REFERENCE: PB/5-30909A
CURRENT APPLICATION NUMBER: US/09/586,719
CURRENT FILING DATE: 2000-06-05
NUMBER OF SEQ ID NOS: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No. 6551795
                                                               LENGTH: 4649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2449 CGTCGCTGCCGGCCT 2435
                                                                                                                                                                                                                                                                                                                                                                        958
                                                                                                                                                                                                                                                                                                                                                                                                                                                      15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30 CGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                                                                                   8 TCTCTCACGCTCTCA 22
                                                                                                                                                                                                                                                                                                                                                                        TCTCTCACGCTCTCA 972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patentin Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09586719
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                28.8%; Score 15;
100.0%; Pred. No.
tive 0; Mismatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.8%; Score 15; DB 4; 100.0%; Pred. No. 24; tive 0; Mismatches
  28.8%;
  Score 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 3;
23;
  DВ
  6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2664;
Length 4649;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 4198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT 28
US-08-669-785-1/c
                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                          US-08-669-785-3
                  Sequence 1, Application US/08669785 Patent No. 6309648 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/08669785 Patent No. 6309648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity Matches 15; Conserv
                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (202) 408-4000
TELEFAX: (202) 408-4400
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/669,785
FILING DATE: 27-JUN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Meyers, Kenneth J.
REGISTRATION UMBER: 25,146
REFERENCE/DOCKET NUMBER: 02356.0072-00000
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow,
STREET: 1300 I Street, N.W., Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: BetBou, Fotini
APPLICANT: Sebo, Peter
APPLICANT: Guibo, Nicole
TITLE OF INVENTION: Protective Epitopes Of Adenyl
TITLE OF INVENTION: Cyclase-Haemolysin(AC-Hly), Their Application To
TITLE OF INVENTION: The Treatment Or To The Prevention Of Bordetella Infections.
                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: DNA (genomic)
   APPLICANT:
                                                                                                                                                                                                                                                                                                       OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1300 1 50
CITY: Washington
                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 5118 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                            LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4350 GCTGCCGGCCTCGCC 4336
                                                                                                                                             4164 GCTGCCGGCCTCGCC 4150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
   Betsou, Fotini
                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                1..5115
                                                                                                                                                                                                                                   28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                   /note= "AMINO ACID SEQUENCE CORRESPONDING TO THE NUCLEOTIDE SEQUENCE OF THE GENE CODING FOR THE B. Bronchiseptica AC-Hly"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>
                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.
                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23;
                                                                                                                                                                                                                                   DB 4; Length 5118; 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Garrett & Dunner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                0
á
                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                ş
```

```
RESULT 29
5183745-5/c
;Patent No.
                                                                                                    5183745-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-669-785-1
                                                                                                                                                                 BIOLOGICAL USES
NUMBER OF SEQUENCES: 13
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US.
                                                                                                                                   SEQ ID NO:5:
                                                                                                                                                                                                                                                          BARZU,
                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (202) 408-4400 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Meyers, Kenneth J.
REGISTRATION NUMBER: 25,146
REFERENCE/DOCKET NUMBER: 0235
TELECOMMUNICATION INFORMATION:
TELECHIONE: (202) 408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PACENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/669,785
FILING DATE: 27-JUN-1996
CLASSIFICATION: 424
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                        APPLICANT: DANCHIN, ANTOINE;GLASER, PHILLIPPE;KRIN, EVELYN, ZU, OCTAVIEN;LADANT, DANIEL;ULLMAN, AGNES
TITLE OF INVENTION: ADENYL CYCLASE DERIVATIVES AND THEIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSE: Finnegan, Henderson, Farabow, Garrett & Dunner
STREET: 1300 I Street, N.W., Suite 700
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Protective Epitopes Of Adenyl TITLE OF INVENTION: Cyclase-Haemolysin(AC-Hly), Their Application To TITLE OF INVENTION: The Treatment Or To The Prevention Of Bordetella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: CDS
LOCATION: 979..6096
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: 1i
                                                                                                                     LENGTH: 6443
                                                                                                                                                    FILING DATE: 25-OCT-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 6441 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                     5145
                                                                                                                                                                                                                                                                                                                                                                                                     34 GCTGCCGGCCTCGCC 48
34 GCTGCCGGCCTCGCC 48
                               l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                               5183745
                                                                                                                                                                                                                                                                                                                                                                                                                                                       15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20005-3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                   GCTGCCGGCCTCGCC 5131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sebo, Peter
Guiso, Nicole
                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              979..6096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA (genomic)
                         28.8%; 5c.
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                   28.8%; Score 15;
100.0%; Pred. No.
tive 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "AMINO ACID SEQUENCE CORRESPONDING TO THE NUCLEOTIDE SEQUENCE OF THE GENE CODING FOR THE B. Pertussis AC-Hly"
                                                                                                                                                                      US/08/426,541
                                               Score 15; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02356.0072-00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
22;
                                             22;
                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 6441;
                                                                Length 6443;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Infections
                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
US-09-922-445-1
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                        ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 30
US-09-453-702B-242/c
US-09-453-702B-242/c
Sequence 242, Application US/09453702B
Patent No. 6365733
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-453-702B-242
                                                       GENERAL INFORMATION:
APPLICANT: Andersson, Maria K.
APPLICANT: Berglund, Lars G. '
APPLICANT: Reneland, Rikard I
APPLICANT: Adam, Gail I. R.
                                                                                                                                                    Sequence 1, Application US/09922445 Patent No. 6528268
                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                   TITLE OF INVENTION: REAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION
                                                                                                                                                                                                                                                                  26165 TEGETETEGTEGETG 26151
                                                                                                                                                                                                                                                                                                                                                             ocal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear MOLECULE TYPE: DNA (genomic) SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (608) 251-91
WATION FOR SEQ ID NO: 242:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/453,702B
FILING DATE: 03-Dec-1999
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: Quarles & Brady
STREET: 1 South Pinckney S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Seay, Nicholas J.
REGISTRATION NUMBER: 27386
REFERENCE/DOCKET NUMBER: 90
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Diskette, 3.50 inch. 1.44Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: No. 6365723el Sequences of NUMBER OF SEQUENCES: 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Blattner, Frederick R.
APPLICATION NUMBER: US/09/922,445
                                                                                                                                                                                                                                                                                              23 TCGCTCTCGTCGCTG 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGCCGGCCTCGCC 5133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                       Berglund, Lars G. T.
Reneland, Rikard H.
Adam, Gail I. R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 31880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/110,955 FILING DATE: 04-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Word Perfect 8.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 53701-2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: WI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Madison
                                                                                                                                                                                                                                                                                                                                         28.8%; Score 15; DB 4; Length 31880; larity 100.0%; Pred. No. 19; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perna,
Plunkett, oa,
Rod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Burland,
                                     REAGENTS AND METHODS FOR DETECTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (608) 251-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nicole
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251-9166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Valerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960296.95017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Street
                                                                                                                                                                                                                                                                                                                                                                                                                                          242:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       म
•
                                 OF HEART FAILURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       coli 0157
                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                     0
```

```
OTHER INFORMATION:
NAME/KEY: misc feature
LOCATION: (32163). (32163)
OTHER INFORMATION: nucleotic
OTHER INFORMATION: A or C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT FILING DATE: 2001-08-0
NUMBER OF SEQ ID NOS: 51
SOFTWARE: PatentIn version 3.1
SEQ ID NO 1
INCERTION: (32529)..(33414)
COTHER INFORMATION:
NAME/KEY: misc_feature
LOCATION: (32614)..(33614)
OTHER INFORMATION: nucleotide 32614 is a single nucleotide polymorphism which other INFORMATION: nucleotide 32614 is a single nucleotide polymorphism which other INFORMATION: A or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (24941) ... (24941)
OTHER INFORMATION: nucleot
                                                                                                                                                                                                                                                                                                            OTHER INFORMATION:
NAME/KEY: Intron
                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (31028).
OTHER INFORMATION:
                                                                                                                                            LOCATION: (32401).
                                                                                                                                                                               NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                NAME/KEY: exon
LOCATION: (31748)..(31841)
                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (30895)..(31027)
OTHER INFORMATION:
NAME/KEY: Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (30520)..(30681)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
LOCATION: (27645)..(27645)
OTHER INFORMATION: nucleot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: Intron
TOCATION: (27179)..(30519)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION: (26157)..(26252)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: nucleotide OTHER INFORMATION: A or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (24801)..(24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VAME/KEY: Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COCATION: (27025).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: 5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                            OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THER INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OCATION: (1)..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH: 38653
                                                                                                                                                                 (32401) .. (32528)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (26402)
                                                                                                                                                                                                                                                                                          (31842) . . (32400)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (26544) . . (27024)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (26253)
                                                                                                                                                                                                                                                                                                                                                                                                        (31028) .. (31747)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (30682) .. (30894)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (26156)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .. (26543)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .. (26401)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . (27178)
                                                                                                                                                                                                nucleotide 32163 is a single nucleotide polymorphism which can A or \ensuremath{\text{\textbf{C}}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleotide
T or C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nucleotide 27645 is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (24801)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-08-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24941 is a single nucleotide polymorphism which can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24801 is a single nucleotide polymorphism which can k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a single nucleotide polymorphism which can
                              can
                              r
                                                                                                                                                                                                                 r
```

```
RESULT 32
US-08-804-227C-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 7, Application US/08804227C Patent No. 5876991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM Compatible
OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCI(DOS) Text only
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/804,227C
FILING DATE: February 21, 1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBLICATION INFORMATION:
DATABASE ACCESSION NUMBER: Genbank/AC004923
DATABASE ENTRY DATE: 1999-12-21
ERLEVANT RESIDUES: (1)..(38653)
                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 317-276-2459
INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: exon
LOCATION: (38342)..(38653)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (34315)..(34588)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Intron
LOCATION: (36524)..(38341)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: (36405)..(36523)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: (34589).
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: Intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Kuhstoss, Stuart A.
APPLICANT: Rosteck, Paul R., Jr.
APPLICANT: Sutton, Kimberly L.
TITLE OF INVENTION: POLYKETIDE SYNTHASE GENES
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: THOMAS G. PLANT 1501
STREET: LILLY CORPORATE CENTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OCATION: (33598)..(34314)
                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Plant, Thomas, G.
REGISTRATION NUMBER: 35,784
REFERENCE/DOCKET NUMBER: X-6
                 SEQUENCE CHARACTERISTICS:
LENGTH: 44377 base pai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: DeHoff, Bradley S.
                                                                                                                                                                                                                                                                                                                                                            ZIP: 46285
                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8343 CGCTCTCATCGCTCT 8357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                                                                 INDIANAPOLIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCTCTCATCGCTCT 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (34589) .. (36404)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (33415) . . (33597)
                                                                                                                                                                                                                                                                                                                                                                                                 H
44377 base pairs ucleic acid
                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.8%; Score 15; DB 100.0%; Pred. No. 19 tive 0; Mismatches
                                                                                                              X-8231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
BD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 38653;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 33
US-08-804-198-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-804-227C-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08804198 Patent No. 5945320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                  TELEPHONE: 317-276-3885
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genc
FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
LOCATION:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION:
FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                       CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: CANTRELL, PAUL R.
REGISTRATION NUMBER: 36,470
                                          LENGTH: 44377 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic
                                                                                                                                                                                                                                                                     OPERATING SYSTEM: Macintosh 7.0
SOFTWARE: Microsoft Word 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/804,198
                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Macintosh
OPERATING SYSTEM: Macinto
                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: PAUL R. CANTRELL 1.
STREET: LILLY CORPORATE CENTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                               FEATURE:
                                                                                                                                                              REFERENCE/DOCKET NUMBER: P9
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Richardson, Mark A.
APPLICANT: Rosteck, Paul R., Jr.
TITLE OF INVENTION: PLATENOLIDE SYNTHASE GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
 NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: LILLY CORPORTY: INDIANAPOLIS
                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17373 GÉTGÉÉGGÉÉTÉGÉE 17387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                             46285
                                                                                                                                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Burgett, Stanley G.
Kuhstoss, Stuart A.
Rao, Nagaraja R.
Richardson, Mark A.
                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
350..14002
CDS
350..14002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36155..41830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
20110..31284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14046..20036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31329..36071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sac
                                           DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 15; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 44377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

```
APPLICANT: Schupp, Thomas
APPLICANT: Ligon, James
APPLICANT: Molnar, Istvan
APPLICANT: Zirkle, Ross
APPLICANT: Cyr, Devon
APPLICANT: Cyr, Devon
ITILE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
FILE REFERENCE: 4-30582A
CURRENT APPLICATION NUMBER: US/09/568,102
CURRENT FILING DATE: 2000-05-10
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR PILING DATE: 1999-06-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; FEATURE:
; NAME/KEY:
; LOCATION:
US-08-804-198-1
                                                                                                                                                                                                                                                                                                  RESULT 35
US-09-568-102-1/c
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; SOFTWARE: PatentIn Ver. 2.0
; SEO ID NO 1
; LENGTH: 68750
; TYPE: DNA
; ORCANISM: Sorangium cellulosum
US-09-335-409-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-335-409-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 34
                                                                                                                                                                                                                                           Sequence 1, Application US/09568102 Patent No. 6346404 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 28.8%; Score 15; DB 3; Best Local Similarity 100.0%; Pred. No. 18; Matches 15; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/09335409 Patent No. 6121029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 28.8%; Score 15; Best Local Similarity 100.0%; Pred. No. Matches 15; Conservative 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Schupp, Thomas
APPLICANT: Ligon, James
APPLICANT: Ligon, James
APPLICANT: Moinar, Istvan
APPLICANT: Zirkle, Ross
APPLICANT: Zirkle, Ross
APPLICANT: Cyr, Devon
APPLICANT: Goerlach, Joern
TITLE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
FILE REFERENCE: 4-10582A
CURRENT APPLICATION NUMBER: US/09/335,409
CURRENT FILING DATE: 1999-06-17
NUMBER OF SEQ ID NOS: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17373 GCTGCCGGCCTCGCC 17387
                                                                                                                                                                                                                                                                                                                                                                                  6467 TEGETGEEGGEETEG 6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34 GCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                      32 recerececerce 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36155..41830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SdO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
31329..36071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
20110..31284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
14046..20036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 68750;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 44377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Sorangium cellulosum US-09-567-969-1
                                                                                                                                                                                                                                                                                                                                                                                             US-09-568-480-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 36
US-09-567-969-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-568-102-1 .
                                                     APPLICANT: CYr, Devon
APPLICANT: Goerlach, Joern
TITLE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
FILE REFERENCE: 4-30582A
CURRENT FILING DATE: 2000-05-10
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR FILING DATE: 1999-06-17
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/09568480 Patent No. 6355458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/09567969 Patent No. 6355457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                           APPLICANT: Schupp, Thomas
APPLICANT: Ligon, James
APPLICANT: Molnar, Istvan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Cyr, Devon
APPLICANT: Goerlach, Joern
TITLE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
FILE REFERENCE: 4-30582A
CURRENT APPLICATION NUMBER: US/09/567,969
CURRENT FILING DATE: 2000-05-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Schupp, Thomas
APPLICANT: Ligon, James
APPLICANT: Molnar, Istvan
APPLICANT: Zirkle, Ross
                                                                                                                                                                                                                                                                APPLICANT:
LENGTH: 68750
TYPE: DNA
ORGANISM: Sorangium cellulosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: 09/335,409
PRIOR FILING DATE: 1999-06-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 68750
TYPE: DNA
ORGANISM: Sorangium cellulosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 68750
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   y Match 28.8%; Score 15; DB Local Similarity 100.0%; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6467 recerrecedecered 6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6467 TCGCTGCCGGCCTCG 6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32 TCGCTGCCGGCCTCG 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGCTGCCGGCCTCG 46
                                                                                                                                                                                                                                                            Molnar, Istvan
Zirkle, Ross
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.8%; Score 15; DB ilarity 100.0%; Pred. No. 18 Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 68750;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 68750;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Ligon, James
APPLICANT: Molnar, Istvan
APPLICANT: Zirkle, Ross
APPLICANT: Goverlach, Joern
TITLE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
FILE REFERENCE: 4-30582A
CURRENT APPLICATION UNMBER: US/09/568,472
CURRENT FILING DATE: 2000-05-10
PRIOR APPLICATION UNMBER: 09/335,409
PRIOR APPLICATION UNMBER: 09/335,409
PRIOR APPLICATION UNMBER: 09/335,409
SEQ ID NO 1
SEQ ID NOS: 30
SOFTWARE: Patentin Ver. 2.0
SEQ ID NOS: 30
LENGTH: 68750
TYPE: DNA
CORANISM: Sorangium cellulosum
US-09-568-472-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 38
US-09-568-486-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-568-472-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-568-486-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-568-480-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 1
LENGTH: 68750
TYPE: DNA
ORGANISM: Sorangium cellulosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/09568472 Patent No. 6358719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/09568486 Patent No. 6355459
    Query Match 28.8%; Score 15; DB 4; Length 68750; Best Local Similarity 100.0%; Pred. No. 18; Matches 15; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/568,486
CURRENT FILING DATE: 2000-05-10
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR FILING DATE: 1999-06-17
NUMBER OF SEQ ID NOS: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Zirkle, Ross
APPLICANT: Cyr, Devon
APPLICANT: Goerlach, Joern
TITLE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
FILE REFERENCE: 4-30582A
FILE REFERENCE: 4-30582A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Schupp, Thomas
APPLICANT: Ligon, James
APPLICANT: Molnar, Istvan
APPLICANT: Zirkle, Ross
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                y Match 28.8%; Score 15; DB 4; Local Similarity 100.0%; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6467 TCGCTGCCGGCCTCG 6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6467 TCGCTGCCGGCCTCG 6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32 recereceseceres 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32 TCGCTGCCGGCCTCG 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28.8%; Score 15; DB 4; 100.0%; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 68750;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 68750;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
    ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
APPLICANT: Ligon, James
APPLICANT: Ligon, James
APPLICANT: Ligon, James
APPLICANT: Molnar, Istvan
APPLICANT: Zirkle, Ross
APPLICANT: Cyr, Devon
APPLICANT: Cyr, Devon
APPLICANT: Cyr, Devon
FITLE OF INVENTION: GENES FOR THE BIOSYNTHESIS OF EPOTHILONES
CURRENT APPLICATION NUMBER: US/09/567,899
CURRENT FILING DATE: 2000-05-10
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR APPLICATION NUMBER: 09/335,409
PRIOR FILING DATE: 1999-06-17
SOFTWARE: Patentin Ver. 2.0
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1
LENGTH: 68750
TYPE: DNA
ORGANISM: Sorangium cellulosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
Search completed: November 13, 2003, 10:59:54 Job time: 79 secs
                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 40
US-09-567-899-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                US-09-567-899-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09567899 Patent No. 6383787
                                                                                                                                                    Matches
                                                                                                                                                                    Query Match
Best Local Similarity
                                                                      6467 TCGCTGCCGGCCTCG 6453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6467 rederecedectree 6453
                                                                                                                                                  15;
                                                                                                            32 recerececerce 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32
                                                                                                                                                    Conservative
                                                                                                                                                                    28.8%; Score 15; DB 4; 100.0%; Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                0;
                                                                                                                                                    Mismatches
                                                                                                                                                                                      Length 68750;
                                                                                                                                                    Indels
                                                                                                                                                  0
                                                                                                                                                Gaps
```

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                             Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Listing first 1000 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nucleic search, using
                                                                                                                                                                                                                                                                                                                  Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/VS07 PUBCOMB.seq:*

2: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*

3: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*

4: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*

4: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*

6: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*

6: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*

7: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*

9: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

10: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*

11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*

12: /cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*

13: /cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*

14: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*

15: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*

16: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

17: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

16: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

17: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

16: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

17: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*

16: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
                                                                                                                                                                                                               Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      November 13, 2003, 10:26:42 ; Search time 214 Seconds (without alignments) 794.143 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-1
52
            2169961 seqs, 1634102185 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 atgcagttctctcacgctct.....cgctgccggcctcgccagtg 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd
           1392
1392
1653
1653
1872
2451
2563
2610
3201
3201
3201
330
336
                                                                                                                                                                                                                 DB
        12 US-10-286-606-11

13 US-99-11

11 US-99-918-995-25977

US-99-897-214-7

US-99-768-826-21

US-10-993-463-199

12 US-10-993-463-191

12 US-10-993-463-191

12 US-10-993-463-191

12 US-10-993-463-187

13 US-10-993-463-187

14 US-10-698-1931

15 US-10-106-698-1931

17 US-99-294-0938-4207

18 US-99-878-574-15763

18 US-98-878-574-15763

18 US-99-764-8770-129
                                                                                                                                                                                                                 ΙD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sw model
                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4339922
      Sequence 11, Appl Sequence 25977, Appl Sequence 7, Appli Sequence 17, Appli Sequence 189, App Sequence 191, App Sequence 187, App Sequence 187, App Sequence 187, App Sequence 1931, App Sequence 1931, App Sequence 15763, A Sequence 1259, App Sequence 1259, App
                                                                                                                                                                                                            Description
                                                    იი
                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0000 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        იიი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0 0 0 0 0 0 0
       4 US-10-125-540-129
2 US-10-29-678-60
2 US-10-29-678-60
2 US-10-29-678-60
2 US-10-29-678-60
2 US-10-29-678-60
2 US-10-29-678-60
2 US-10-29-632-115584
3 US-10-027-632-115584
4 US-10-027-632-115584
4 US-10-156-761-974
12 US-10-156-761-4661
14 US-10-156-761-4661
14 US-10-156-761-4661
14 US-10-156-761-4661
14 US-10-156-761-158
14 US-10-156-761-158
15 US-09-981-342A-2978
16 US-09-981-342A-2978
17 US-09-981-342A-2978
18 US-09-981-342A-2978
19 US-09-981-342A-2978
19 US-09-981-342A-2978
10 US-09-981-342A-2978
11 US-09-981-353-11
11 US-09-987-355A-11
12 US-10-128-714-5070
12 US-10-128-714-5070
13 US-10-128-714-5070
14 US-10-128-714-5070
15 US-09-981-353A-11
16 US-09-981-353A-11
17 US-09-999-964-1
18 US-10-156-761-1
19 US-09-999-964-1
19 US-10-156-761-1
11 US-09-999-964-1
11 US-09-999-964-1
11 US-09-999-964-1
11 US-09-981-701-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110
110
114
114
112
112
114
114
9 US-09-973-876-2874
9 US-09-876-889-36
14 US-10-156-761-1349
11 US-09-876-889-36
14 US-10-156-761-1349
11 US-09-876-761-1346
12 US-10-156-761-1546
9 US-09-9712-020-64
13 US-09-9712-020-64
14 US-10-156-761-1986
15 US-09-9718-995-245-8
16 US-10-027-632-186608
17 US-09-9718-995-245-8
18 US-10-027-632-301390
18 US-09-764-870-573
18 US-10-027-632-775528
18 US-10-027-632-775529
18 US-10-027-632-775107
18 US-10-027-632-775107
18 US-10-027-632-775107
18 US-10-027-632-775107
18 US-10-027-632-775107
18 US-10-259-165-277
18 US-10-259-165-371
18 US-09-938-842A-129
Sequence 129, App Sequence 264, Appl Sequence 260, Appl Sequence 60, Appl Sequence 115584, Sequence 115584, Sequence 1168, App Sequence 279, App Sequence 270, App Sequence 270, App Sequence 216, App Sequence 218, App Sequence 211, Appl Sequence 211, Appl Sequence 214, Appl Sequence 21458, App Sequence 21458, App Sequence 2156, Appl Sequence 2156, Appl Sequence 21546, App Sequence 21546, App Sequence 27352, Sequence 27352,
```

იიი

იი

155 156 157 158 159 160 161	440000	4444	***	C 134 C 135 136	13312	C 124 C 125 C 126 C 127 C 127		114 115 116 116 117	c 109 c 110 c 111	0000	100 101 102 103	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9999
, 4444444 , 444444444444444444444444444	44444 4444	14 14 14	1 1 1 1 1 4 1 4 4 4	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 1 1 1 1 1 1 4 4 4 4 4 4 4 4 4 4 4 4 4	4444	4444	11111	, , , , , , , , , , , , , , , , , , ,	1 1 1 1 1 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1444.	, 444444 . 444444	114
00000000000000000000000000000000000000		00000	<u> </u>		,,,,,	, , , , , , ,			, , , , , , ,	, , , , ,	00000	,,,,,,,,,	, , ,
7319 7319 7460 7494 11238 13894 13966 15738 25801	5509 6208 6868 6981 6981	3979 4521 4810 4810 5163	3269 3464 3871 3897 3953	3031 3031 3031 3053	2634 2799 2844 2894	2098 2176 2436 2634	1767 1857 1966 1970 2036	1608 1617 1698 1725	1101 1122 1392 1401	983 983 983	960	769 789 804 816	621 663 769
		بر بر بر بر بر		, , , , , , ,		. 9			,	. بر بر بر ب	44404		446.
4 US-10-97-340-299 2 US-10-240-965-149 2 US-10-161-051-190 4 US-10-205-032-15 2 US-10-315-515-121 2 US-10-315-515-122 2 US-10-329-079-46 2 US-10-181-319-13	US-10-387-388-1 US-10-311-455-168 US-09-919-039-39 US-10-113-013-139 US-09-873-319-636 US-09-960-706-977	US-10-387-388-4 US-10-002-600-93 US-09-885-329-5 US-10-387-388-3 US-10-387-388-7	US-10-128-714-5423 US-09-848-852A-2 US-09-729-674-1 US-10-156-761-4899 US-09-764-891-7347	US-10-027-632-115642 US-10-027-632-115642 US-10-128-714-5233 US-10-128-714-423	US-09-948-369-7 US-09-902-627-2 US-09-814-353-22021 US-10-128-714-233 US-10-977-804-1	US-10-325-917-4 US-10-325-917-4 US-10-032-159A-19 US-10-156-761-1420 US-09-391-340-7	US-10-156-761-3727 US-09-965-553-24 US-10-017-161-2369 US-10-272-417-1 US-09-783-252-18	US-10-125-917-6 US-10-125-917-6 US-09-738-626-2422 US-09-938-842A-2638 US-10-001-843-7 US-10-938-842A-1453	US-10-032-159A-1 US-10-156-761-4958 US-10-156-761-2193 US-10-156-761-6368	US-10-027-632-323876 US-10-027-632-323943 US-10-027-632-323876 US-10-027-632-323943 US-10-027-632-323943	US-10-027-632-146101 US-10-027-632-146102 US-09-770-445-630 US-10-007-521-1	US-09-815-242-4032 US-09-815-242-4032 US-09-998-582-1 US-09-998-582-1 US-10-156-761-5917 US-10-027-632-146101 US-10-027-632-146102	US-10-027-632-132148 US-10-027-632-132148 US-09-770-149-454 US-09-770-632-22263
Sequence 299, App Sequence 299, App Sequence 39, Appl Sequence 190, Appl Sequence 15, Appl Sequence 12, Appl Sequence 122, Appl Sequence 122, Appl Sequence 13, Appl	Sequence 1, Appl Sequence 168, Ap Sequence 39, App Sequence 136, Ap Sequence 636, Ap	Sequence 4, Appl Sequence 93, Appl Sequence 5, Appl Sequence 3, Appl Sequence 7, Appl	Sequence 5423, Ap Sequence 2, Appli Sequence 1, Appli Sequence 4899, Ap Sequence 7347, Ap	Sequence 115642, Sequence 115642, Sequence 5233, Ap Sequence 423, App	Sequence 7, Appli Sequence 2, Appli Sequence 22021, A Sequence 233, App	Sequence 4, Appli Sequence 4, Appli Sequence 19, Appli Sequence 1420, Ap Sequence 7, Appli	Sequence 3727, Appl Sequence 24, Appl Sequence 2369, Ap Sequence 1, Appli Sequence 18, Appli	Sequence 6, Appli Sequence 6, Appli Sequence 2422, Ap Sequence 2638, Ap Sequence 74, Appl Sequence 1453, Ap	Sequence 1, Appli Sequence 1, Appli Sequence 4958, Ap Sequence 2193, Ap Sequence 6368, Ap	Sequence 323876, Sequence 323943, Sequence 323876, Sequence 323943,	Sequence 146101, Sequence 146102, Sequence 630, App Sequence 1, Appli	Sequence 2263, A Sequence 2263, Ap Sequence 4032, Ap Sequence 1, Appli Sequence 5917, Ap Sequence 146101,	132148, 132148, 132148,
	ָּע מּיבּ מּימּים.												
22222222222222222222222222222222222222	C C C 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	c 216 c 217 c 218 c 219 c 220	c 211 212 213 214 215		202		٠					167 168 169 170	
226 227 13 228 13 229 13 230 13 231 13 232 13 233 13 234 13	221 13 222 13 222 13 6 223 13 6 225 13	c 216 13 c 217 13 c 218 13 c 219 13 c 220 13	c 211 13 212 13 213 13 214 13 214 13	200 2007 13 2008 13 209 13 210	202 13 203 13 204 13 205 13	197 198 199 13 199 13 200 13	193 · 13 194 · 13 195 · 13 196 · 13	1111111	182 13 183 13 184 13	:::::::::::::::::::::::::::::::::::::::	173 13 174 13 175 13 176 13	160 160 168 169 14 170 14 170 14	163 14 164 14 165 14
226 13 25.0 227 13 25.0 228 13 25.0 229 13 25.0 230 13 25.0 231 13 25.0 231 13 25.0 232 13 25.0 233 13 25.0 234 13 25.0 235 13 25.0	221 13 25.0 222 13 25.0 223 13 25.0 224 13 25.0 225 13 25.0 6 226 13 25.0	c 216 13 25.0 c 217 13 25.0 c 218 13 25.0 c 219 13 25.0 c 220 13 25.0 c 220 13 25.0	c 211 13 25.0 212 13 25.0 213 13 25.0 214 13 25.0 215 13 25.0	200 13 25.0 2007 13 25.0 2008 13 25.0 2009 13 25.0 210 13 25.0	202 13 25.0 203 13 25.0 204 13 25.0 205 13 25.0	197 13 25.0 198 13 25.0 199 13 25.0 200 13 25.0 201 13 25.0	192 13 25.0 193 13 25.0 194 13 25.0 195 13 25.0 196 13 25.0	13 25.0 13 25.0 13 25.0 13 25.0 13 25.0	182 13 25.0 183 13 25.0 184 13 25.0 185 13 25.0	13 25.0 13 25.0 13 25.0 13 25.0	173 13 25.0 174 13 25.0 175 13 25.0 176 13 25.0	167 14 26.9 168 14 26.9 169 14 26.9 170 14 26.9 171 14 26.9	163 14 26.9 164 14 26.9 165 14 26.9
226 227 228 228 229 13 25 230 231 231 25 232 233 233 233 234 235 235 236 237 237 238 239 25 25 25 25 25 25 25 25 25 25 25 25 25	221 13 25.0 222 13 25.0 223 13 25.0 224 13 25.0 225 13 25.0 6 226 13 25.0	c 216 13 25.0 c 217 13 25.0 c 218 13 25.0 c 219 13 25.0 c 220 13 25.0 c 220 13 25.0	c 211 13 25.0 212 13 25.0 213 13 25.0 214 13 25.0 215 13 25.0	200 13 25.0 2007 13 25.0 2008 13 25.0 2009 13 25.0 210 13 25.0	202 13 25.0 203 13 25.0 204 13 25.0 205 13 25.0	197 13 25.0 198 13 25.0 199 13 25.0 200 13 25.0 201 13 25.0	192 13 25.0 193 13 25.0 194 13 25.0 195 13 25.0 196 13 25.0	13 25.0 13 25.0 13 25.0 13 25.0 13 25.0	182 13 25.0 183 13 25.0 184 13 25.0 185 13 25.0	13 25.0 13 25.0 13 25.0 13 25.0	173 13 25.0 174 13 25.0 175 13 25.0 176 13 25.0	167 14 26.9 168 14 26.9 169 14 26.9 170 14 26.9 171 14 26.9	163 14 26.9 164 14 26.9 165 14 26.9
226 13 25.0 432 11 227 13 25.0 439 11 229 13 25.0 444 11 231 13 25.0 444 11 233 13 25.0 444 11 233 13 25.0 444 11 233 13 25.0 444 11 233 13 25.0 444 11 235 13 25.0 444 11 235 13 25.0 444 11 235 13 25.0 444 11 235 13 25.0 444 11	221 13 25.0 424 1 222 13 25.0 427 1 222 13 25.0 427 1 223 13 25.0 427 1 224 13 25.0 427 1 25 13 25.0 427 1 26 225 13 25.0 428 1	C 216 13 25.0 407 1 C 217 13 25.0 410 1 C 218 13 25.0 410 1 C 219 13 25.0 418 1 C 220 13 25.0 422 1	C 211 13 25.0 395 1 212 13 25.0 399 1 213 13 25.0 401 1 214 13 25.0 401 1 215 13 25.0 401 1	200 13 25.0 357 19 2007 13 25.0 357 9 208 13 25.0 381 1 209 13 25.0 382 1 210 13 25.0 393 1	202 13 25.0 343 1 203 13 25.0 343 1 204 13 25.0 345 1 205 13 25.0 349 1	197 13 25.0 288 9 198 13 25.0 291 9 199 13 25.0 296 9 200 13 25.0 333 1 201 13 25.0 336 1	192 13 25.0 268 1 193 13 25.0 272 9 1193 13 25.0 272 9 1194 13 25.0 284 9 1195 13 25.0 284 9 1196 13 25.0 286 1	13 25.0 225 1 13 25.0 226 1 13 25.0 226 1 13 25.0 249 9 13 25.0 249 1	1182 13 25.0 182 1 1182 13 25.0 189 1 1183 13 25.0 206 1 1184 13 25.0 206 1 1185 13 25.0 208 9	13 25.0 122 1 13 25.0 122 1 13 25.0 122 1 13 25.0 172 1	173 13 25.0 20 9 174 13 25.0 20 1 175 13 25.0 65 1 176 13 25.0 65 1	167 14 26.9 171336 1 168 14 26.9 2940917 169 14 26.9 2940917 169 14 26.9 3186778 170 14 26.9 3186778 171 14 26.9 3186778	163 14 26.9 60196 1 164 14 26.9 61944 1 165 14 26.9 96649 1
226 13 25.0 439 227 13 25.0 439 228 13 25.0 444 229 13 25.0 444 231 13 25.0 444 231 13 25.0 444 232 13 25.0 444 233 13 25.0 444 234 13 25.0 444 235 13 25.0 444 236 237 25.0 444 237 25.0 444 238 25.0 444	221 13 25.0 424 1 222 13 25.0 427 1 222 13 25.0 427 1 223 13 25.0 427 1 224 13 25.0 427 1 25 13 25.0 427 1 26 225 13 25.0 428 1	C 216 13 25.0 407 1 C 217 13 25.0 410 1 C 218 13 25.0 410 1 C 219 13 25.0 418 1 C 220 13 25.0 422 1	C 211 13 25.0 395 1 212 13 25.0 399 1 213 13 25.0 401 1 214 13 25.0 401 1 215 13 25.0 401 1	200 13 25.0 357 19 2007 13 25.0 357 9 208 13 25.0 381 1 209 13 25.0 382 1 210 13 25.0 393 1	202 13 25.0 343 1 203 13 25.0 343 1 204 13 25.0 345 1 205 13 25.0 349 1	197 13 25.0 288 9 198 13 25.0 291 9 199 13 25.0 296 9 200 13 25.0 333 1 201 13 25.0 336 1	192 13 25.0 268 1 193 13 25.0 272 9 1193 13 25.0 272 9 1194 13 25.0 284 9 1195 13 25.0 284 9 1196 13 25.0 286 1	13 25.0 225 1 13 25.0 226 1 13 25.0 226 1 13 25.0 249 9 13 25.0 249 1	1182 13 25.0 182 1 1182 13 25.0 189 1 1183 13 25.0 206 1 1184 13 25.0 206 1 1185 13 25.0 208 9	13 25.0 122 1 13 25.0 122 1 13 25.0 122 1 13 25.0 172 1	173 13 25.0 20 9 174 13 25.0 20 1 175 13 25.0 65 1 176 13 25.0 65 1	167 14 26.9 171336 1 168 14 26.9 2940917 169 14 26.9 2940917 169 14 26.9 3186778 170 14 26.9 3186778 171 14 26.9 3186778	163 14 26.9 60196 1 164 14 26.9 61944 1 165 14 26.9 96649 1

C 3004 C 3002 C 3005 C 306 C 306	C 295 C 296 C 297 298 299 300		286 287 288	C 283	280 281 282	277 277 278 279	273 274 275	c 269 270 271 c 272	265 267 268	262 263	258 259 260	255 256 257	C 253		C 248 249	246		C 242	240	236 237 238
11111111111	13 13 13		11333	:::::::::::::::::::::::::::::::::::::::	13 13	1315	1313	13 13 13	131313	12323	13	1 1 1 1 1 1 1	1111	355	13 13	13	113	13	13	223
25.00 25.00 25.00 25.00					5555		יטיטי	տտտտ	տտտտ	$\sigma \sigma \sigma \sigma \sigma$	ហហហ	ហហហ	տտւ	, ,, ,,	5.5	55.5	າ ທຸ	, vi v	າເກຸເກ	25.0 25.0
593 593 594 598 611 611	590 590 598 598 598	565 573 580	563 563	557 557	550 550	543 543	527 528 534	522 522 527	507 507 507	507 507 507	504 507 507	504 504	503	495 500	483 489	480	479	474	460	448 458 460
13 13 13 12 12 13						_														
US-10-027-632-104894 US-10-027-632-104894 US-10-027-632-104894 US-10-029-386-5507 US-10-029-386-5588 US-09-925-301-262 US-10-027-632-223826 US-10-027-632-223826	0-027- 0-027- 0-029- 0-027- 0-027-	9-918-995-188 0-027-632-28180 0-027-632-28180 0-066-543-795 0-029-386-12674	0-027- 0-027- 0-027- 0-027-	09-815-343-466 -09-938-842A-4261 -09-887-576-714	-09-814- -09-814- -10-029-	- 10 - 029 - - 09 - 867 -)9 - 864 - 7 - 09 - 887 -	-10-027-632-32343 -09-918-995-23561 -10-156-761-5941	-09-833- -10-027- -10-027- -10-027-	-10-027-632-10916 -10-027-632-18038 -10-027-632-30014 -10-027-632-30014	027- 027- 027- 027-	-10-027-632-13558 -10-027-632-10916 -10-027-632-10916	-10-027-632-13557 -10-027-632-13558 -10-027-632-13557	-10-040-	-10-156- -09-918-	09-864-7 -09-918-	09-864-761-423 -09-918-995-1297	-10-027- -10-027-	-09-918-	-10-027-	-09-918- -09-918-
Sequence 104894, Sequence 104894, Sequence 5007, A Sequence 9558, App Sequence 223826, Sequence 240833, Sequence 240833, Sequence 240833,	321	188 281 281 799	2771 2771 2771 2771 2771	426	6069 1234 9370	9861 5697 829,	3234 2356 5941	Sequence 972, App Sequence 275858, Sequence 275858, Sequence 323436,	Sequence 109163, Sequence 180387, Sequence 300147, Sequence 300148,	Sequence 180387, Sequence 300147, Sequence 300148, Sequence 109162,	Sequence 135580, Sequence 109162, Sequence 109163,	135579 135580 135579	3217,	Sequence 2922, Ap Sequence 1734, Ap	498, A	H 22 4	equence 22233, equence 287831,	quence 564	Sequence 142477, Sequence 142477,	Sequence 12325, A Sequence 23102, A Sequence 29406, A
ัซิซ์	. איני פיע	<i>o</i> 0∉																		
		იიიი		356 C 357		C 349				C 334 C 335 C 336				3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	321	319 320		C 314		309 310 311
0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	c 363 1 c 364 1 c 365 1 c 366 1	359 360 361 1	356	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	350	346 348 1	342 343 344 1	338 339 340	335 335 336 337	332	328 329 30	326				316	314	312 313	
C 373 1 2 2 375 1 375 1 2 376 1 377 1 377 1 379 1 379 1 381 1 381 1 1	C 369 13 25 25 25 25 25 25 25 25 25 25 25 25 25	c 363 13 25. c 364 13 25. c 365 13 25. c 366 13 25. c 367 13 25.	359 13 25 360 13 25 361 13 25 362 13 25	356 13 25 357 13 25 358 13 25	353 13 25 354 13 25 354 13 25	349 13 25. 350 13 25. 351 13 25.	346 13 25 347 13 25 348 13 25	342 13 25 343 13 25 344 13 25 345 13 25	338 13 25 339 13 25 340 13 25 341 13 25	334 13 25 335 13 25 336 13 25 337 13 25	331 13 25 332 13 25 333 13 25	328 13 25 329 13 25	326 13 25 326 13 25 327 13 25	13 25	13 25	13 25 13 25	316 13 25 317 13 25	314 13 25 315 13 25	312 13 25 313 13 25	13 25 13 25 13 25
25. 25. 25. 25. 25. 25. 25. 25. 25. 25.	C 369 13 25.0 C 369 13 25.0 C 369 13 25.0 C 370 13 25.0 A C 371 13 25.0 C 373 13 25.0	c 363 13 25.0 c 364 13 25.0 c 365 13 25.0 c 366 13 25.0 c 367 13 25.0	359 13 25.0 360 13 25.0 361 13 25.0 362 13 25.0	356 13 25.0 357 13 25.0 358 13 25.0	353 13 25.0 353 13 25.0 354 13 25.0	349 13 25.0 350 13 25.0 351 13 25.0	346 13 25.0 347 13 25.0 348 13 25.0	342 13 25.0 343 13 25.0 344 13 25.0 345 13 25.0	338 13 25.0 339 13 25.0 340 13 25.0 341 13 25.0	334 13 25.0 335 13 25.0 336 13 25.0 337 13 25.0	331 13 25.0 332 13 25.0 333 13 25.0	328 13 25.0 329 13 25.0	325 13 25.0 326 13 25.0 327 13 25.0	13 25.0	13 25.0	13 25.0	316 13 25.0 317 13 25.0	314 13 25.0 315 13 25.0	312 13 25.0 313 13 25.0	13 25.0 13 25.0 13 25.0
Depth of the control	C 368 13 25.0 792 14 C 369 13 25.0 798 14 C 370 13 25.0 807 14 A C 371 13 25.0 811 13 C 372 13 25.0 811 13	c 363 13 25.0 780 10 c 364 13 25.0 780 11 c 365 13 25.0 780 11 c 366 13 25.0 789 9 c 367 13 25.0 792 11	359 13 25.0 751 13 360 13 25.0 764 9 361 13 25.0 775 12 362 13 25.0 775 13	356 13 25.0 736 13 357 13 25.0 738 10 358 13 25.0 751 12	352 13 25.0 735 13 353 13 25.0 735 13 354 13 25.0 735 13	349 13 25.0 735 12 350 13 25.0 735 12 351 13 25.0 735 12	346 13 25.0 694 12 347 13 25.0 699 10 348 13 25.0 735 10	342 13 25.0 671 12 343 13 25.0 685 13 344 13 25.0 685 13 345 13 25.0 685 13	338 13 25.0 668 13 339 13 25.0 668 13 340 13 25.0 668 13 341 13 25.0 669 9	334 13 25.0 659 9 335 13 25.0 668 12 336 13 25.0 668 12 337 13 25.0 668 12	332 13 25.0 654 12 333 13 25.0 654 12 333 13 25.0 654 13	328 13 25.0 650 12 329 13 25.0 650 13	325 13 25.0 637 13 326 13 25.0 640 12 327 13 25.0 650 12	13 25.0 637 12 13 25.0 637 13	13 25.0 631 13 13 25.0 637 12	13 25.0 631 12 13 25.0 631 13	316 13 25.0 625 12 317 13 25.0 625 13	314 13 25.0 624 13 315 13 25.0 624 13	312 13 25.0 624 12 313 13 25.0 624 12	13 25.0 611 13 13 25.0 612 10 13 25.0 618 12
25.0 822 c 374 13 25.0 822 375 13 25.0 846 p c 376 13 25.0 892 377 13 25.0 892 378 13 25.0 903 379 13 25.0 903 380 13 25.0 903 381 13 25.0 903	C 368 13 25.0 792 14 US-10-152.0 C 369 13 25.0 792 14 US-10-152.0 792 13 25.0 811 12 US-10-027.0 792 13 25.0 811 13 US-10-027.0 792 13 25.0 812 13 US-10-027.0 792 13 25.0 812 13 US-10-027.0 792 13 25.0 812 13 US-10-027.0 792 13 25.0 822 13 US-10-027.0 792 13 25.0 822 13 US-10-027.0 792 13 25.0 812 13 US-10-027.0 792 14 US	C 363 13 25.0 780 10 US-09-996 C 364 13 25.0 780 11 US-09-997 C 365 13 25.0 780 11 US-09-997 C 366 13 25.0 789 9 US-09-8466 C 367 13 25.0 792 11 US-09-866	359 13 25.0 751 13 US-10-027 360 13 25.0 764 9 US-09-925-3 361 13 25.0 775 12 US-10-027 362 13 25.0 775 13 US-10-027	356 13 25.0 736 13 US-10-027 357 13 25.0 738 10 US-09-738 358 13 25.0 751 12 US-10-027	352 13 25.0 735 13 US-10-027- 353 13 25.0 735 13 US-10-027- 354 13 25.0 735 13 US-10-027- 355 13 25.0 736 12 US-10-027-	349 13 25.0 735 12 US-10-027 350 13 25.0 735 12 US-10-027 351 13 25.0 735 12 US-10-027	346 13 25.0 694 12 US-09-814 347 13 25.0 699 10 US-09-974 348 13 25.0 735 10 US-09-938	342 13 25.0 671 12 US-10-027 343 13 25.0 671 13 US-10-027 344 13 25.0 665 12 US-10-027 345 13 25.0 665 13 US-10-027	338 13 25.0 668 13 US-10-027 339 13 25.0 668 13 US-10-027 340 13 25.0 668 13 US-09-770- 341 13 25.0 669 9 US-09-770-	334 13 25.0 659 9 US-09-956-0 335 13 25.0 668 12 US-10-027- 336 13 25.0 668 12 US-10-027- 337 13 25.0 668 12 US-10-027-0	331 13 25.0 651 14 US-10-156-761-5660 332 13 25.0 654 12 US-10-027-632-2387 333 13 25.0 654 13 US-10-027-632-2387	328 13 25.0 650 12 US-10-027-632-325 329 13 25.0 650 13 US-10-027-632-104 310 13 25.0 650 13 US-10-027-632-104	325 13 25.0 637 13 US-10-027-632-2379 326 13 25.0 640 12 US-10-1447A-60 327 13 25.0 650 12 US-10-027-632-1044	13 25.0 637 12 US-10-027-632-23 13 25.0 637 13 US-10-027-632-23	13 25.0 631 13 US-10-027-632-4803	13 25.0 631 12 US-10-027-632-4803 13 25.0 631 13 US-10-027-632-4803	316 13 25.0 625 12 US-10-027-632-9588 317 13 25.0 625 13 US-10-027-632-9588	314 13 25.0 624 13 US-10-027-632-20811 315 13 25.0 624 13 US-10-027-632-20811	312 13 25.0 624 12 US-10-027-632-2081 313 13 25.0 624 12 US-10-027-632-2081	13 25.0 611 13 US- 13 25.0 612 10 US- 13 25.0 618 12 US-

υ .α. ω .α.	C 451	4 4	44	4	44	4.	44	44	<u>ء</u> ھ	4.	43	4.	ى د باند	ه د	a. W	4	42	42	4	44	4 4	4.	4.	42	44	<u>د</u> د	4 4	4.	41	4 :	4	4 4	4.	40	40	4	4 4	4	4	40	40	40	ט טפט	ى دى دى	29	39	39	ú	و	ω i	0 390	ם טנו	ם מ	οŒ	œ	384	C 383	,
13	13	13	13	13	13	13	u u u	13	1 L 3 L	. μ. ω	13	13 (1 L	ú	ι μ ω	13	13	13	13	13	1 6	, 13	13	13	13	. t	ם נו	13	13	13	<u>.</u> .		13	13	13	13				13	13	13	<u>.</u> .	u u	13	13	13	13	ָ ע	u u	<u>,,</u>		م بـ ما نـ	. L	13	<u>,</u>	 	;
 	25.0	л <u>Г</u>		5	v v	5	л vi	5		25.0	5.		л U	25.0	ŗ	ŗ	5	Š	ທ .	25.0	n v	25.0	5	25.0	<u>ب</u>	η U	ო .თ			<u>ა</u>	2 .	n 0		5		25.0	л U •	י י •	יטיי	'n	ŗ	5	лŲ	າ ທ	5	ب	•	5	S	υ.	25.0	n u	σ .	n v	5	<u>ب</u>	25.0	•
1024 1029	989	989	989 989	989	989 989	989	989	989	686 686	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	989	990	686	989	989	989	989	000	9 9	989	989	989	989	999	989	989	989	989	987	972	967	967	000	979	954	943	933	912)
	15																											12	12	12	: :	3 2	12	12	12	12	3 5	1 2	12	12	12	12			N	N	_	4	. سو	4		٥	0	4.0	N	•	1 G	
-10-211-884-43 -10-156-761-5574	15-833A-305 15-822A-305 10-951-43	-10-006-041A-305	-10-015-391A-305 -10-017-407A-305	-10-020-063A-305	-10-017-610A-305 -10-006-063A-305	-10-006-768A-305	-10-015-386A-305	-10-012-755A-305	-10-013-430A-305 -10-011-671A-305	-10-007-194A-305	-10-013-913A-305	-10-017-527A-305	-10-006-1178-305	-10-012-121A-305	-10-015-869A-305	-10-015-393A-305	-10-006-818A-305	-10-006-856A-305	-10-015-519A-305	-10-015-394A-305	-10-015-389A-305	-10-007-236A-305	-10-015-385A-305	-10-012-753A-305	-10-015-715A-305	-10-015-480A-305	-10-013-906A-305	-10-012-237A-305	-10-015-671A-305	-10-015-653A-305	-10-015-610A-105	-10-013-911A-305	-10-013-910A-305	-10-013-909A-305	-10-012-754A-305	12-752A-305	-10-012-1778-305	-10-017-867A-305	-10-012-064A-305	-211-884-21	-10-210-951-21	10-017-306A-305	-10-017-253&-305	-10-006-172A-305	-10-006-130A-305	-10-015-387A-305	-09-946-374-305	-10-146-772-299	-09-934-455-497	-10-106-698-521	-10-027-632-30606	-10-027-622-20606	-09-938-842A-2529 00-864-761-17333	-10-156-761-1715	-10-259-165-603	09-770-445-375	US-19-864-761-6808	200
e 43,	Sequence 305, App Sequence 305, App Sequence 43, Appl	e 305	e 305	e 305	e 305	8 305	e 305	e 305	905	e 305	e 305	205	e 305	e 305	e 305	e 305	e 305	e 305	e 305	302	e 305	e 305	e 305	e 305	305	305	e 305	e 305	e 305	305	200	e 305	e 305	e 305	e 305	202	e 305	e 305	e 305	e 21,	e 21,	e 305	305	e 305	e 305	e 305	e 305	e 299	e 497	e 521	יט טע	1/222, A	17777 A	ce 1715	equence 603, Ap	quence 375, Ar	۰ ۲	
															_		_																					_	_																			_
000		_	ດດ	O	0	ר			10	UT (5 0	n v	ເກ	u	ហ	on i	ın ı	љ	л . С	oυ	ج	4	49	٠.	4.4		9	48	4.6	2 4	4.4	8	48	48	4.	0 <	47	47	C 476	7	7	477	0 47	7	4	_	4				<u>.</u>	4.	าต	459	C 458	4 4	C 455	1
	523 524 525	52	$\sim \sim$	-	, ,,,		_		55	o i	90	0 ~	í 6	5	0	0	02	9	5 4	0 00	97	ō	.	4	2 6	, <u> </u>	_			7 0	, ,											- '	, –	0	69	σ.	67	466	א פ	ס ת	2 6	ř						
	$\sim \sim \sim$	522	20 1	19 1	17	1 1 5	14 1	13	<u>سر</u> د	0		_ د	. 6	5	04 1	03	21	-			7 1	6 1	— 1	- 4	~ ~	. 1		13	13			13	13	13	13	11	13	13	13	13	13			_	9 1	68 1	7	66 1	65.	1	~ ~		13	13	13	13		
13 25. 13 25.	23 1 24 1 25	522 13 25.	20 13 25. 21 13 25.	19 13 25.	17 13 25.	15 13 25.	14 13 25.	13 13 25.	13 25.	0 13 25.	13 25	13 25.	6 13 25.	5 13 25.	04 13 25.	03 13 25	2 13 25	1 13 25.	0 13 25.	13 25.	7 13 25.	6 13 25.	13 25.	13 25	3 13 25.	1 13 25.	13 25.	25.	25	13 25.	13 25.	25.	25.	25.	25.	2 0	25.	25.	25.	25.	25	13 25	13 25.	13 25.	9 13 25.	68 13 25	7 13 25	66 13 25.	11 25	13 25	3 13 25.	13 25.	2 25	25.	25.	25.))))	;
13 25.0	23 13 25.0 24 13 25.0 25 13 25.0	522 13 25.0	20 13 25.0	19 13 25.0	17 13 25.0	15 13 25.0	14 13 25.0	13 13 25.0	13 25.0	0 13 25.0	13 25.0	13 25.0	6 13 25.0	5 13 25.0	04 13 25.0	03 13 25.0	2 13 25 0	1 13 25.0	0 13 25.0	13 25.0	7 13 25.0	6 13 25.0	13 25.0	4 13 25 0	3 13 25.0	1 13 25.0	13 25.0	25.0	25.0	13 25.0	13 25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	13 25.0	13 25.0	13 25.0	9 13 25.0	68 13 25.0	7 13 25.0	66 13 25.0	65 13 25.0	64 13 25 0	3 13 25.0	13 25.0	25.0	25.0	25.0	25.0	25.0	,
13 25.0 13 25.0	23 13 25.0 1401 24 13 25.0 1452 25 13 25.0 1510	522 13 25.0 1395	20 13 25.0 1386 21 13 25.0 1386	19 13 25.0 1386 19 13 25.0 1386	17 13 25.0 1374	15 13 25.0 1338 16 13 25.0 1346	14 13 25.0 1328	13 13 25.0 1311 13 13 25.0 1317	13 25.0 1311	0 13 25.0 1311	13 25.0 1311	13 25.0 1311	6 13 25.0 1311	5 13 25.0 1311	04 13 25.0 1311	03 13 25.0 1311	2 13 25.0 1311	1 13 25.0 1311	0 13 25.0 1311	13 25.0 1311	7 13 25.0 1311	6 13 25.0 1311	13 25.0 1302	4 13 25.0 1292	2 13 25.0 1292 3 13 25.0 1292	1 13 25.0 1292	13 25.0 1291	25.0 1291	25.0 1291	13 25.0 128/	13 25.0 1281	25.0 1280	25.0 1278	25.0 1275	25.0 1275	25.0 1273	25.0 1263	25.0 1227	25.0 1227	25.0 1214	25.0 1214	13 25.0 1214	13 25.0 1165	13 25.0 1155	9 13 25.0 1151	68 13 25.0 1127	7 13 25.0 1127	66 13 25.0 1102	65 13 25.0 1102	64 13 25.0 1000	2 13 25.0 1086	13 25.0 1084	25.0 1084	25.0 1074	25.0 1067	25.0 1050	25.0 1035	
13 25.0 1539 12 13 25.0 1539 14	23 13 25.0 1401 14 US-10-156-761-1 24 13 25.0 1452 10 US-09-738-626-2 25 13 25.0 1530 10 US-09-738-626-	522 13 25.0 1395 10 US-09-712-363-3	20 13 25.0 1386 12 US-10-081-739A	19	17 13 25.0 1374 14 US-	15	14 13 25.0 1328 14 US-10-166-218-9	13 13 25.0 1311 14 US-	13 25.0 1311 14 US-	0 13 25.0 1311 14 US-	13 25.0 1311 14 US-	13 25.0 1311 14 US-	6 13 25.0 1311 14 US-	5 13 25.0 1311 14 US-	04 13 25.0 1311 14 US-	03 13 25.0 1311 14 US-	2 13 25.0 1311 14 (15-10-081-872-13	1 13 25 0 1311 13 13-10-027-632-1336	0 13 25 0 1311 13 05-10-027-632-1238	13 25.0 1311 12 US-	7 13 25.0 1311 12 US-10-027-632-1238	6 13 25.0 1311 12 US-10-027-6;	13 25.0 1302 9 US-09-879-95	4 13 25 0 1292 14 03-10-102-60	2 13 25.0 1292 12 US-10-195-83	1 13 25.0 1292 11 US-09-938-86	13 25.0 1291 14 US-	25.0 1291 14 US-10-125-6	25.0 1291 12 US-10-195-8	13 25.0 128/ 14 US-10-156-70	13 25.0 1281 10 US-09-881-79	25.0 1280 11 US-09-988-06	25.0 1278 14 US-10-156-76	25.0 1275 14 US-10-156-76	25.0 1275 13 US-10-027-63	25.0 1273 14 US-10-125-00	25.0 1263 14 US-10-156-761-1	25.0 1227 14 US-10-156-761-6	25.0 1227 10 US-09-938-842A-123	25.0 1214 13 US-10-027-632-3034	25.0 1214 13 US-10-027-632-3034	13 25 0 1214 12 13-10-027-632-3	13 25.0 1165 12 US-10-259-165-593	13 25.0 1155 12 US-10-287-274-2	9 13 25.0 1151 10 US-	68 13 25.0 1127 10 US-09-887-576-3	7 13 25.0 1127 9 US-0	66 13 25.0 1102 14 US-	55 13 25.0 1102 9 IN-09-825-301-477	64 13 25 0 1100 10 17:09-974-701-246	2 13 25.0 1086 9 US-0	1 13 25.0 1084 13 US-10-027-632-261	25.0 1084 12 US-10-027-632-261	25.0 1074 14 US-10-156-761-258	25.0 1067 10 US-09-917-800A-1	25.0 105/ 9 US-10-156-761-571	25.0 1035 9 US-0	

Რ ᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡᲡ	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	522
			13
		00000000000000000000000000000000000000	
.44444444444	4444444444444	15447 15447	44
122 122 122 122 122 122 122 122 122 122	122 122 122 122 122 122 122 122 122 122		10
-10-147-510-41 -10-147-511-41 -10-147-529-41 -10-147-529-41 -10-153-586-41 -10-158-783-41 -10-058-786-41 -10-0158-786-41 -10-017-083A-4 -10-017-083A-4 -10-0140-019-41 -10-140-022-41 -10-140-022-41 -10-140-062-41 -10-140-862-41	-10-145-628-41 -10-145-633-41 -10-145-746-41 -10-145-748-41 -10-145-826-41 -10-145-870-41 -10-145-870-41 -10-145-879-41 -10-145-879-41 -10-146-725-41 -10-146-725-41 -10-146-725-41 -10-146-755-41 -10-147-501-41		-09-978-295A-46 -09-978-697-465
equence 417,	equence 417, equen	quence 465 quence 467 quence 417	equence 465,
**************************************	5	\$	App
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000
6659 1 6662 1 6663 1 6664 1 6665 1 6666 1 6667 1 6670 1 6771 1	66444331 6644433 664447 6655 6655 6655 6655 6655 6655 66	600 600 600 600 600 600 600 600 601 601	601
659 13 25 660 13 25 661 13 25 662 13 25 663 13 25 664 13 25 665 13 25 666 13 25 667 13 25 667 13 25 667 13 25 667 13 25 667 13 25 667 13 25 670 13 25 671 13 25 672 13 25 673 13 25	6443 13 25 6444 13 25 6446 13 25 6447 13 25 6448 13 25 6448 13 25 649 13 25 651 13 25 652 13 25 653 13 25 655 13 25 655 13 25 657 13 25	60054 60054 6006 6110 6110 6110 6110 6110 6110 611	601 13 25. 602 13 25.
660 13 25.0 154 661 13 25.0 154 662 13 25.0 154 663 13 25.0 154 664 13 25.0 154 665 13 25.0 154 666 13 25.0 154 666 13 25.0 154 667 13 25.0 154 669 13 25.0 154 669 13 25.0 154 670 13 25.0 154 671 13 25.0 154 672 13 25.0 154 673 13 25.0 154	642 13 25.0 154 643 13 25.0 154 644 13 25.0 154 645 13 25.0 154 646 13 25.0 154 647 13 25.0 154 648 13 25.0 154 649 13 25.0 154 649 13 25.0 154 649 13 25.0 154 650 13 25.0 154 651 13 25.0 154 652 13 25.0 154 653 13 25.0 154 655 13 25.0 154 656 13 25.0 154 657 13 25.0 154 658 13 25.0 154 659 13 25.0 154	606 13 25 607 13 25 608 13 25 609 13 25 611 13 25 611 13 25 611 13 25 611 13 25 612 13 25 613 13 25 614 13 25 615 13 25 616 13 13 25 617 13 25 618 13 25 619 13 25 620 13 25 621 13 25 622 13 25 623 13 25 623 13 25 624 13 25 625 13 25 627 13 25 628 13 25 629 13 25 629 13 25 631 13 25 631 13 25 632 13 25 633 13 25 634 13 25 635 13 25 637 13 25 638 13 25 639 13 25 639 13 25 630 13 25 630 13 25 631 13 25 632 13 25 633 13 25 634 13 25 635 13 25 637 13 25 637 13 25 638 13 25 639 13 25 639 13 25 639 13 25 639 13 25 630 13 25 630 13 25 630 13 25 631 13 25 632 13 25 633 13 25 633 13 25 634 13 25 635 13 25 637 13 25 638 13 25 639 13 25 640 13 25 640 13 25 640 13 2	601 13 25.0 154 602 13 25.0 154
659 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1666 13 25.0 1547 1667 13 25.0 1547 1667 13 25.0 1547 1667 13 25.0 1547 1667 13 25.0 1547 1670 1547 1670 1547 167	643 13 25.0 1547 1648 13 25.0 1547 1648 13 25.0 1547 1649 13 25.0 1547 1649 13 25.0 1547 1649 13 25.0 1547 1650 13 25.0 1547 1655 13 25.0 1547 1655 13 25.0 1547 1655 13 25.0 1547 1655 13 25.0 1547 1655 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1656 13 25.0 1547 1657 13 25.0 1547 1656 13 25.0 1547 1666 13 25.0	600 13 25.0 154 600 13 25.0 154 601 13 25.0 154 612 13 25.0 154 613 13 25.0 154 614 13 25.0 154 615 13 25.0 154 616 13 25.0 154 617 13 25.0 154 618 13 25.0 154 619 13 25.0 154 620 13 25.0 154 621 13 25.0 154 622 13 25.0 154 623 13 25.0 154 624 13 25.0 154 625 13 25.0 154 626 13 25.0 154 627 13 25.0 154 628 13 25.0 154 629 13 25.0 154 620 13 25.0 154 621 13 25.0 154 622 13 25.0 154 623 13 25.0 154 624 13 25.0 154 625 13 25.0 154 627 13 25.0 154 628 13 25.0 154 639 13 25.0 154 631 13 25.0 154 631 13 25.0 154 632 13 25.0 154 633 13 25.0 154 634 13 25.0 154 635 13 25.0 154 637 13 25.0 154	601 13 25.0 1547 1 602 13 25.0 1547 1
659 13 25.0 1547 12 US-10-146-793-41 659 13 25.0 1547 12 US-10-147-480-41 660 13 25.0 1547 12 US-10-147-485-41 661 13 25.0 1547 12 US-10-147-486-41 662 13 25.0 1547 12 US-10-147-490-41 663 13 25.0 1547 12 US-10-147-490-41 664 13 25.0 1547 12 US-10-147-490-41 665 13 25.0 1547 12 US-10-147-490-41 666 13 25.0 1547 12 US-10-147-490-41 667 13 25.0 1547 12 US-10-147-490-41 667 13 25.0 1547 12 US-10-147-514-41 669 13 25.0 1547 12 US-10-152-394-41 670 13 25.0 1547 12 US-10-152-394-41	642 13 25.0 1547 12 US-10-147-522-41 643 13 25.0 1547 12 US-10-152-401-41 643 13 25.0 1547 12 US-10-152-401-41 644 13 25.0 1547 12 US-10-158-762-41 645 13 25.0 1547 12 US-10-158-792-41 646 13 25.0 1547 12 US-10-145-792-41 647 13 25.0 1547 12 US-10-145-751-41 649 13 25.0 1547 12 US-10-145-822-41 649 13 25.0 1547 12 US-10-145-822-41 650 13 25.0 1547 12 US-10-145-827-41 650 13 25.0 1547 12 US-10-145-827-41 651 13 25.0 1547 12 US-10-145-869-41 652 13 25.0 1547 12 US-10-145-875-41 653 13 25.0 1547 12 US-10-145-875-41 654 13 25.0 1547 12 US-10-145-875-41 655 13 25.0 1547 12 US-10-145-875-41 656 13 25.0 1547 12 US-10-145-958-41 656 13 25.0 1547 12 US-10-145-958-41 656 13 25.0 1547 12 US-10-146-787-41 657 13 25.0	606 13 25.0 1547 607 13 25.0 1547 608 13 25.0 1547 609 13 25.0 1547 611 13 25.0 1547 612 13 25.0 1547 613 13 25.0 1547 614 13 25.0 1547 615 13 25.0 1547 616 13 25.0 1547 617 13 25.0 1547 618 13 25.0 1547 619 13 25.0 1547 619 13 25.0 1547 620 13 25.0 1547 621 13 25.0 1547 622 13 25.0 1547 623 13 25.0 1547 624 13 25.0 1547 625 13 25.0 1547 626 13 25.0 1547 627 13 25.0 1547 628 13 25.0 1547 629 13 25.0 1547 620 13 25.0 1547 621 13 25.0 1547 622 13 25.0 1547 623 13 25.0 1547 624 13 25.0 1547 625 13 25.0 1547 627 13 25.0 1547 628 13 25.0 1547 639 13 25.0 1547 630 13 25.0 1547 631 13 25.0 1547 632 13 25.0 1547 633 13 25.0 1547 634 13 25.0 1547 635 13 25.0 1547 637 13 25.0 1547 639 13 25.0 1547 639 13 25.0 1547 639 13 25.0 1547	601 13 25.0 1547 12 US-10-141-705-41
Separation of the control of the con	642 13 25.0 1547 12 US-10-147-502-417 Sequence 417, 643 13 25.0 1547 12 US-10-152-401-417 Sequence 417, 644 13 25.0 1547 12 US-10-152-401-417 Sequence 417, 644 13 25.0 1547 12 US-10-158-462-417 Sequence 417, 645 13 25.0 1547 12 US-10-158-792-417 Sequence 417, 646 13 25.0 1547 12 US-10-158-792-417 Sequence 417, 648 13 25.0 1547 12 US-10-145-751-417 Sequence 417, 649 13 25.0 1547 12 US-10-145-751-417 Sequence 417, 649 13 25.0 1547 12 US-10-145-827-417 Sequence 417, 650 13 25.0 1547 12 US-10-145-827-417 Sequence 417, 651 13 25.0 1547 12 US-10-145-827-417 Sequence 417, 652 13 25.0 1547 12 US-10-145-869-417 Sequence 417, 653 13 25.0 1547 12 US-10-145-875-417 Sequence 417, 654 13 25.0 1547 12 US-10-145-875-417 Sequence 417, 655 13 25.0 1547 12 US-10-145-875-417 Sequence 417, 656 13 25.0 1547 12 US-10-145-875-417 Sequence 417, 657 13 US-10-145-875-417 Sequence 417, 658 13 25.0 1547 12 US-10-145-875-417 Sequence 417, 659 13 25.0 1547 12 US-10-145-875-417 Sequence 417, 659 13 25.0 1547 12 US-10-146-870-417 Sequence 417, 659 13 25.0 1547 12 US-10-146-8	13 25.0 1547 12 US-10-142-763-41 1606 13 25.0 1547 12 US-10-142-42-41 606 13 25.0 1547 12 US-10-142-42-41 606 13 25.0 1547 12 US-10-142-42-41 606 13 25.0 1547 12 US-10-142-42-41 609 13 25.0 1547 12 US-10-142-42-41 610 13 25.0 1547 12 US-10-142-821-41 610 13 25.0 1547 12 US-10-142-821-41 611 13 25.0 1547 12 US-10-142-831-41 613 13 25.0 1547 12 US-10-142-763-41 614 13 25.0 1547 12 US-10-142-763-41 615 13 25.0 1547 12 US-10-142-763-41 616 13 25.0 1547 12 US-10-142-763-41 616 13 25.0 1547 12 US-10-142-763-41 616 13 25.0 1547 12 US-10-142-763-41 617 13 25.0 1547 12 US-10-142-887-41 619 13 25.0 1547 12 US-10-142-888-41 622 13 25.0 1547 12 US-10-143-116-41 622 13 25.0 1547 12 US-10-143-91-41 623 13 25.0 1547 12 US-10-144-957-41 623 13 25.0 1547 12 US-10-145-090-41 625 13 25.0 1547 12 US-10-145-090-41 625 13 25.0 1547 12 US-10-145-629-41 628 13 25.0 1547 12 US-10-145-629-41 629 13 25.0 1547 12 US-10-145-629-41 629 13 25.0 1547 12 US-10-145-629-41 629 13 25.0 1547 12 US-10-145-629-41 633 13 25.0 1547 12 US-10-145-629-41 633 13 25.0 1547 12 US-10-145-629-41 633 13 25.0 1547 12 US-10-145-752-41 633 13 25.0 1547 12 US-10-145-752-41 633 13 25.0 1547 12 US-10-145-752-41 633 13 25.0 1547 12 US-10-145-829-41 640 640 640 640 640 640 640 640 640 640	601 13 25.0 1547 12 US-10-141-700-417 Sequence 417, 602 13 25.0 1547 12 US-10-141-705-417 Sequence 417,

77443							C C 6884 C 6887 C 6887
		• • • • • • • • • •		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	· · · · · · · · · · · · · · ·	• • • • • • • • • • •	255.00000000000000000000000000000000000
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	**************************************		υ ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο		0000000000	1547 1547 1547 1547 1547 1547 1547 1547
							12 12 12 12 12 12 12 12 12 12 12 12 12 1
-09-99-829A-46 -10-013-922A-46 -10-017-086A-64 -10-121-046-417 -10-123-156-417 -10-123-158-95-417 -10-145-805-417 -10-145-874-46	-10-125-704-4 -10-125-927-4 -10-145-124A- -10-160-502A- -10-165-247A- -10-165-247A- -09-978-194A- -09-978-681A-	-10-123-159-4 -10-123-159-4 -10-123-157-4 -10-123-906-4 -10-124-816-4 -10-124-816-4	-10-121-044-417 -10-121-055-417 -10-121-057-417 -10-121-058-417 -10-121-058-417 -10-121-059-417 -10-121-060-417	-10-147-516-4 -10-152-398-4 -10-013-926A -10-145-017A -10-145-750-4 -10-152-373-4 -10-164-728A	-10-143-029A -10-145-625 -10-145-625 -10-145-627 -10-145-960 -10-145-962 -10-146-789 -10-147-496 -10-147-965	-10-153-756-417 -10-157-794-417 -10-157-797-417 -10-158-491-417 -10-139-980-417 -10-142-762-417 -10-142-766-417 -10-142-766-417 -10-143-028A-46	US-10-160-504-417 US-10-107-191A-465 US-10-145-634-417 US-10-147-520-417 US-10-147-520-417 US-10-147-989-417 US-10-147-999-417 US-10-152-378-417 US-10-152-383-417 US-10-152-383-417 US-10-152-383-417 US-10-152-387-417 US-10-152-389-417 US-10-152-389-417 US-10-152-389-417 US-10-152-389-417 US-10-152-389-417 US-10-152-389-417 US-10-152-389-417 US-10-152-390-417 US-10-152-390-417 US-10-152-390-417 US-10-152-390-417
equence 465, equence 465, equence 417, equence 417, equence 417, equence 417, equence 417, equence 465, equence 465, equence 417, equence 417,	equence 417, equence 418, equence 465, equence 465, equence 465, equence 465, equence 465,	equence 417,	equence 417, equence 417, equence 417, equence 417, equence 417, equence 417, equence 417,	equence 417, equence 417, equence 465, equence 465, equence 417, equence 417, equence 417, equence 465,	equence 465, equence 417,	equence 417, equence 465,	Sequence 417, App Sequence 417, App
							C 74.
810 1 811 1 812 1 813 1 814 1 815 1 815 1 816 1 816 1	803 804 805 1 806 1 807 1	796 797 798 1 799 1 800 1 801	790 791 792 793 794 794	782 783 784 785 786 787	772 773 774 775 776 777 777 778 778 779 780	763 764 765 766 767 768 768 769 770	747 748 749 751 751 752 753 754 755 756 757 758 758
810 13 811 13 812 13 813 13 814 13 815 13 816 13 817 13 818 17 13	803 13 804 13 805 13 806 13 807 13 808 13	796 13 797 13 798 13 799 13 800 13 801 13	790 13 791 13 791 13 792 13 793 13 794 13	782 13 783 13 784 13 785 13 786 13 787 13	772 13 773 13 774 13 775 13 776 13 777 13 777 13 779 13 779 13 779 13	763 13 764 13 765 13 766 13 767 13 768 13 769 13 770 13	747 13 748 13 749 13 750 13 751 13 752 13 753 13 754 13 755 13 756 13 757 13 758 13 759 13 759 13 759 13
810 13 25. 811 13 25. 812 13 25. 813 13 25. 814 13 25. 815 13 25. 816 13 25. 817 13 25. 818 17 25. 819 13 25. 819 25.	803 13 25. 804 13 25. 805 13 25. 806 13 25. 807 13 25. 809 13 25.	796 13 25. 797 13 25. 798 13 25. 799 13 25. 800 13 25. 800 13 25.	790 13 25 791 13 25 792 13 25 793 13 25 794 13 25 794 13 25 795 13 25	782 13 25. 783 13 25. 784 13 25. 785 13 25. 786 13 25. 787 13 25. 788 13 25.	772 13 25 773 13 25 774 13 25 775 13 25 776 13 25 777 13 25 777 13 25 779 13 25 780 13 25 781 13 25 781 13 25	763 13 25. 764 13 25. 765 13 25. 766 13 25. 767 13 25. 768 13 25. 769 13 25. 770 13 25. 771 13 25.	747 748 749 751 751 752 753 754 755 756 757 758
810 13 25.0 154 811 13 25.0 154 812 13 25.0 154 813 13 25.0 154 814 13 25.0 154 815 13 25.0 154 816 13 25.0 154 817 13 25.0 154 818 17 25.0 154 819 13 25.0 154 819 13 25.0 154	803 13 25.0 154 804 13 25.0 154 805 13 25.0 154 806 13 25.0 154 807 13 25.0 154 808 13 25.0 154 809 13 25.0 154	796 13 25.0 154 797 13 25.0 154 798 13 25.0 154 799 13 25.0 154 800 13 25.0 154 801 13 25.0 154 802 13 25.0 154	790 13 25.0 154 791 13 25.0 154 791 13 25.0 154 792 13 25.0 154 793 13 25.0 154 794 13 25.0 154 795 13 25.0 154	782 13 25.0 154 783 13 25.0 154 784 13 25.0 154 785 13 25.0 154 786 13 25.0 154 787 13 25.0 154 788 13 25.0 154	772 13 25.0 19 773 13 25.0 19 774 13 25.0 19 775 13 25.0 19 776 13 25.0 19 777 13 25.0 19 779 13 25.0 19 779 13 25.0 19 780 13 25.0 19 781 13 25.0 19	763 13 25.0 154 764 13 25.0 154 765 13 25.0 154 766 13 25.0 154 767 13 25.0 154 768 13 25.0 154 768 13 25.0 154 769 13 25.0 154 770 13 25.0 154 771 13 25.0 154	747 13 25.0 154 748 13 25.0 154 749 13 25.0 154 750 13 25.0 155 751 13 25.0 155 752 13 25.0 155 753 13 25.0 155 754 13 25.0 156 755 13 25.0 157 756 13 25.0 157 757 13 25.0 157 758 13 25.0 157 758 13 25.0 157 759 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157
810 13 25.0 1547 1811 13 25.0 1547 1812 13 25.0 1547 1813 25.0 1547 1813 25.0 1547 1814 13 25.0 1547 1815 13 25.0 1547 1816 13 25.0 1547 1817 13 25.0 1547 1818 17 13 25.0 1547 1818 17 13 25.0 1547 1818 17 13 25.0 1547 1818 17 13 25.0 1547 1818 17 13 25.0 1547 1818 17 13 25.0 1547 1818 19 13 25.0 1547 1818	803 13 25.0 1547 1 804 13 25.0 1547 1 805 13 25.0 1547 1 806 13 25.0 1547 1 807 13 25.0 1547 1 808 13 25.0 1547 1 809 13 25.0 1547 1	796 13 25.0 1547 1797 13 25.0 1547 1798 13 25.0 1547 1798 13 25.0 1547 1800 13 25.0 1547 1800 13 25.0 1547 1800 13 25.0 1547 1800 13 25.0 1547 1	790 13 25.0 1547 1791 13 25.0 1547 1792 13 25.0 1547 1792 13 25.0 1547 1794 13 25.0 1547 1795 13 25.0 1547 1795 13 25.0 1547 1795	782 13 25.0 1547 1783 13 25.0 1547 1784 13 25.0 1547 1785 13 25.0 1547 1786 13 25.0 1547 1787 13 25.0 1547 1788 13 25.0 1547 1788 13 25.0 1547 1788 13 25.0 1547 1788	772 13 25.0 1547 773 13 25.0 1547 774 13 25.0 1547 775 13 25.0 1547 776 13 25.0 1547 777 13 25.0 1547 777 13 25.0 1547 779 13 25.0 1547 779 13 25.0 1547 780 13 25.0 1547 781 13 25.0 1547	763 13 25.0 1547 764 13 25.0 1547 765 13 25.0 1547 766 13 25.0 1547 767 13 25.0 1547 768 13 25.0 1547 769 13 25.0 1547 770 13 25.0 1547 771 13 25.0 1547	747 13 25.0 154 748 13 25.0 154 749 13 25.0 154 750 13 25.0 155 751 13 25.0 155 752 13 25.0 155 753 13 25.0 156 755 13 25.0 157 756 13 25.0 157 757 13 25.0 157 758 13 25.0 157 758 13 25.0 157 759 13 25.0 157 759 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157 750 13 25.0 157
810 13 25.0 1547 12 US-10-141-706- 811 13 25.0 1547 12 US-10-141-756- 812 13 25.0 1547 12 US-10-141-757- 813 13 25.0 1547 12 US-10-141-760- 814 13 25.0 1547 12 US-10-141-760- 815 13 25.0 1547 12 US-10-142-752- 816 13 25.0 1547 12 US-10-142-428- 817 13 25.0 1547 12 US-10-142-428- 818 13 25.0 1547 12 US-10-142-428- 819 13 25.0 1547 12 US-10-142-439- 819 13 25.0 1547 12 US-10-142-884-	803 13 25.0 1547 12 US-10-140-809-41 804 13 25.0 1547 12 US-10-140-810-41 805 13 25.0 1547 12 US-10-140-863-41 806 13 25.0 1547 12 US-10-140-865-41 807 13 25.0 1547 12 US-10-141-701-41 808 13 25.0 1547 12 US-10-141-701-41 809 13 25.0 1547 12 US-10-141-701-41 809 13 25.0 1547 12 US-10-141-703-41	796 13 25.0 1547 12 US-10-137-816A-4 797 13 25.0 1547 12 US-10-137-867-41 798 13 25.0 1547 12 US-10-139-963-41 799 13 25.0 1547 12 US-10-140-020-41 800 13 25.0 1547 12 US-10-140-020-41 801 13 25.0 1547 12 US-10-140-020-41 802 13 25.0 1547 12 US-10-140-0-806-41	790 13 25.0 1547 12 US-10-156-844-41 791 13 25.0 1547 12 US-10-156-845-41 791 13 25.0 1547 12 US-10-156-846-41 792 13 25.0 1547 12 US-10-0156-846-41 793 13 25.0 1547 12 US-10-017-084A-4 794 13 25.0 1547 12 US-10-017-085A-4 795 13 25.0 1547 12 US-10-123-913-41	782 13 25.0 1547 12 US-10-125-932-41 783 13 25.0 1547 12 US-10-152-385-41 784 13 25.0 1547 12 US-10-152-393-41 785 13 25.0 1547 12 US-10-152-396-41 786 13 25.0 1547 12 US-10-153-896-41 787 13 25.0 1547 12 US-10-153-840-41 788 13 25.0 1547 12 US-10-153-840-41 788 13 25.0 1547 12 US-10-156-841-41	772 13 25.0 1547 12 US-10-121-063-773 13 25.0 1547 12 US-10-123-213-774 13 25.0 1547 12 US-10-123-213-775 13 25.0 1547 12 US-10-123-291-776 13 25.0 1547 12 US-10-123-791-777 13 25.0 1547 12 US-10-123-771-778 13 25.0 1547 12 US-10-123-911-778 13 25.0 1547 12 US-10-123-911-778 13 25.0 1547 12 US-10-124-823-781 13 25.0 1547 12 US-10-124-823-781 13 25.0 1547 12 US-10-125-931-781	763 13 25.0 1547 12 US-09-978-544A-4 764 13 25.0 1547 12 US-09-978-665A-4 765 13 25.0 1547 12 US-09-978-665A-4 766 13 25.0 1547 12 US-10-013-924A-4 767 13 25.0 1547 12 US-10-020-445A-4 768 13 25.0 1547 12 US-10-121-048-41 769 13 25.0 1547 12 US-10-121-048-41 770 13 25.0 1547 12 US-10-121-053-41 771 13 25.0 1547 12 US-10-121-053-41	747 13 25.0 1547 12 US-10-147-497-417 748 13 25.0 1547 12 US-10-152-371-417 749 13 25.0 1547 12 US-10-152-374-417 749 13 25.0 1547 12 US-10-152-375-417 750 13 25.0 1547 12 US-10-152-397-417 751 13 25.0 1547 12 US-10-152-397-417 752 13 25.0 1547 12 US-10-152-391-417 753 13 25.0 1547 12 US-10-152-391-417 754 13 25.0 1547 12 US-10-156-391-417 755 13 25.0 1547 12 US-10-156-798-417 756 13 25.0 1547 12 US-10-157-794-417 757 13 25.0 1547 12 US-10-157-794-417 758 13 25.0 1547 12 US-10-157-794-417 759 13 25.0 1547 12 US-10-157-794-417 750 13 25.0 1547 12 US-10-157-794-417 750 13 25.0 1547 12 US-10-164-829A-46 761 13 25.0 1547 12 US-10-164-829A-46 762 13 25.0 1547 12 US-10-164-829A-46 762 13 25.0 1547 12 US-10-164-829A-46

	00000000000000000000000000000000000000	
	555555555555555555555555555555555555555	13
Section Sect	<u>. </u>	,,,,,
) די	1010101
Sequence (4), App. Carlot (4), App. Carl	1	122
Sequence (17, App) C (28) Sequence (17, App) C	-10-144-958-411 -10-144-958-411 -10-145-732-411 -10-145-733-411 -10-145-733-411 -10-145-733-411 -10-145-733-411 -10-145-733-411 -10-146-730-411 -10-146-734-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-152-301-411 -10-153-868-411 -10-153-868-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-158-788-411 -10-167-749-465 -10-113-368-411 -10-123-368-411 -10-123-368-417 -10-127-825A-41	-10-143-026B-46 -10-143-027-417 -10-143-113-417
899 11 25.0 1547 14 US-10-127-9014-417 Sequence 417, 990 11 25.0 1547 14 US-10-11830-417 Sequence 417, 990 11 25.0 1547 14 US-10-11830-417 Sequence 417, 990 11 25.0 1547 14 US-10-11830-417 Sequence 417, 990 11 25.0 1547 14 US-10-111-807A-417 Sequence 417, 990 11 25.0 1547 14 US-10-111-807A-417 Sequence 417, 990 11 25.0 1547 14 US-10-117-907A-417 Se	ence 417, ence 4	ence 465, ence 417, ence 417,
25.0 1547 14 US-10-127-901A-417 Sequence 417, 25.0 1547 14 US-10-128-659A-417 Sequence 417, 25.0 1547 14 US-10-121-819A-417 Sequence 417, 25.0 1547 14 US-10-123-919-117 Sequence 417, 25.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Sequence 417, 0. 1547 14 US-10-127-901A-417 Sequence 417, 0. 1547 14 US-10-128-693A-817 Sequence 417, 0. 1547 14 US-10-131-813A-417 Sequence 417, 0. 1547 14 US-10-131-823A-417 Sequence 417, 0. 1547 14 US-10-123-215-417 Sequence 417, 0. 1547 14 US-10-123-215-417 Sequence 417, 0. 1547 14 US-10-123-910-417 Sequence 417,		13
547 14 US-10-128-693A-417 Sequence 417, 14 US-10-1318-13A-417 Sequence 417, 14 US-10-1318-13A-417 Sequence 417, 14 US-10-131-131A-417 Sequence 417, 14 US-10-131-133A-417 Sequence 417, 14 US-10-131-133A-417 Sequence 417, 14 US-10-131-133A-417 Sequence 417, 14 US-10-147-520-417 Sequence 417, 14 US-10-147-520-417 Sequence 417, 14 US-10-147-520-417 Sequence 417, 14 US-10-121-041-417 Sequence 417, 14 US-10-121-041-417 Sequence 417, 15 US-10-123-151-417 Sequence 417, 15 US		
US-10-128-693A-417 Sequence 417, US-10-131-813A-417 Sequence 417, US-10-147-520-417 Sequence 417, US-10-147-520-417 Sequence 417, US-10-121-047-417 Sequence 417, US-10-121-910-417		
10-127-901A-417 Sequence 417, 10-131-813A-417 Sequence 417, 10-131-813A-417 Sequence 417, 10-131-82A-417 Sequence 417, 10-131-83A-417 Sequence 417, 10-131-83A-417 Sequence 417, 10-147-502-417 Sequence 417, 10-147-517-417 Sequence 417, 10-147-517-417 Sequence 417, 10-121-041-417 Sequence 417, 10-121-041-417 Sequence 417, 10-121-041-417 Sequence 417, 10-123-908-417 Sequence 417, 10-125-922-417 Sequence 417, 10-125-922-417 Sequence 417, 10-127-845A-417 Sequence 417, 10-127-85A-417 Sequence 417, 10-127-95A-417 Sequence 417, 10-128-95A-417 10-128-95A-417 10-128-95A-417 10-128-95A-417 10-128-95A-417 10-128-95A-417 10-128-95A-417 1	\\ \tu\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ທຸທຸ
equence 417, equen	**************************************	547 547 547
	547 14 US-10-131-824A-41 547 14 US-10-131-837A-41 547 14 US-10-137-872A-41 547 14 US-10-147-500-417 547 14 US-10-147-526-417 547 14 US-10-147-526-417 547 14 US-10-123-908-417 547 14 US-10-123-918-417 547 14 US-10-123-918-417 547 14 US-10-127-843A-41 14 US-10-127-843A-41 15 US-10-127-843A-41 16 US-10-127-843A-41 17 US-10-127-843A-41 18 US-10-127-843A-41 19 US-10-127-853A-41 19 US-10-123-955-417 19 US-10-123-9	547 14 US-10-127-901A-41 547 14 US-10-128-693A-41 547 14 US-10-131-813A-41

```
APPLICANT: Milliams, Spencer J.

APPLICANT: Milliams, Spencer J.

APPLICANT: Mougous, Joseph

TITLE OF INVENTION: Mycobacterial Sulfation Pathway Proteins

TITLE OF INVENTION: Methods of Use Thereof

FILE REFERENCE: BERK-012CIP

CURRENT APPLICATION NUMBER: US/10/286,606

CURRENT FILING DATE: 2002-10-31

PRIOR APPLICATION NUMBER: 60/285,394

PRIOR APPLICATION NUMBER: 60/345,953

PRIOR APPLICATION NUMBER: 60/345,953

PRIOR APPLICATION NUMBER: 10/126,279

PRIOR APPLICATION NUMBER: 10/126,279

PRIOR FILING DATE: 2002-04-19

NUMBER OF SEQ ID NOS: 58

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 11

LENGTH: 1392

TYDE: DNA

ORGANISM: Mycobacterium avium

FRATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(1392)
US-10-286-606-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-286-606-11/c

; Sequence 11, Application US/10286606

; Publication No. US20030180321A1
Query Match
Best Local Similarity 100.0%; P
Matches 17; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
15447
                                  32.7%; Score 17; DB 12; Length 1392; 100.0%; Pred. No. 4.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-127-824A-417
US-10-127-826A-417
US-10-127-826A-417
US-10-127-830A-417
US-10-127-833A-417
US-10-127-834A-417
US-10-127-834A-417
US-10-127-841A-417
US-10-128-687A-417
US-10-128-687A-417
US-10-128-689A-417
US-10-128-689A-417
US-10-131-825A-417
US-10-131-825A-417
US-10-131-815A-417
US-10-131-815A-417
US-10-131-828A-417
US-10-131-829A-417
US-10-131-829A-417
US-10-131-829A-417
US-10-131-829A-417
US-10-131-932-417
US-10-123-912-417
US-10-124-359-417
US-10-1147-523-417
US-10-124-359-417
US-10-124-359-417
US-10-1147-539-417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                   Mismatches
                   ;
                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence
sequence
sequence
sequence
sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417,
417,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       417,
417,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      417,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 417,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Bertozzi, Carolyn
APPLICANT: Williams, Spencer J.
APPLICANT: Williams, Spencer J.
APPLICANT: Mugous, Joseph
TITLE OF INVENTION: Mycobacterial Sulfation Pathway Proteins
TITLE OF INVENTION: Mycobacterial Sulfation Pathway Proteins
TITLE OF INVENTION: Mycobacterial Sulfation Pathway Proteins
TILE OF INVENTION: Mycobacterial Sulfation Pathway Proteins
TILE OF INVENTION: Mycobacterial Sulfation Pathway Proteins
FILE REFERENCE: BERK-012
CURRENT APPLICATION NUMBER: 60/204-19
FRIOR APPLICATION NUMBER: 60/285, 394
PRIOR FILING DATE: 2001-04-20
PRIOR APPLICATION NUMBER: 60/345,953
PRIOR APPLICATION NUMBER: 60/345,953
PRIOR APPLICATION NUMBER: 60/345,953
PRIOR APPLICATION NUMBER: 50/345,953
PRIOR FILING DATE: 2001-10-26
NUMBER OF SEQ ID NOS: 54
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 1392
                                                                                                                                                                                                                                                               Sequence 25977, Application US/09918995

Publication No. US20030073623A1

GENERAL INFORMATION:
APPLICANT: Hyseq, Inc.
TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES OBTAINED
TITLE OF INVENTION: FROM VARIOUS CDNA LIBRARIES
FILE REFERENCE: 20411-756
CURRENT APPLICATION NUMBER: US/09/918,995
CURRENT FILING DATE: 2001-07-30
PRIOR APPLICATION NUMBER: US/09/235,076
PRIOR APPLICATION NUMBER: US/09/235,076
PRIOR FILING DATE: 1999-01-20
NUMBER OF SEQ ID NOS: 38054
SOFTWARE: FASESEQ for Windows Version 3.0
SEQ ID NO 25977
                                                                                                                  IENGTH: 574

TYPE: DNA

ORGANISM: Homo sapiens
FEATURE:

NAME/KEY: misc feature
LOCATION: (1)...(574)

OTHER INFORMATION: n = A
US-09-918-995-25977
             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
US-09-918-995-25977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 2
US-10-126-279-11/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         믔
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-126-279-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 1392
TYPE: DNA
ORGANISM: Mycobacterium avium
FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(1392)
                                                Matches
                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 11, App. Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290 regregerecedecere 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cal Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         290
           19 CTCATCGCTCTCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29 TCGTCGCTGCCGGCCTC 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
                                                16;
                                            h 30.8%; Score 16; DB Similarity 100.0%; Pred. No. 20 16; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regrederecedeere 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCGTCGCTGCCGGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/10126279
                                                                                                                                       = A,T,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32.7%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 17; DB 14; Length 1392; pred. No. 4.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                       or
                                                                                                                                       G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                              DB 11;
20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                             Length 574;
                                              Indels
                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

밁

194

```
PRIOR APPLICATION NUMBER: PCT/US00/22350
PRIOR FILING DATE: 2000-08-15
PRIOR APPLICATION NUMBER: 60/148,759
PRIOR FILING DATE: 1999-08-16
NUMBER OF SEQ ID NOS: 61
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 21
LENGTH: 1872
TYPE: DNA
ORGANISM: Homo sapiens
US-09-768-826-21
                 RESULT 6
US-10-093-463-189
                                                                                      문
                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Thayer, Edward C.
APPLICANT: Sheppard, Paul O.
APPLICANT: Sheppard, Paul O.
APPLICANT: Presnell Scott R.
TITLE OF INVENTION: Leucine-Rich Repeat Proteins, Zl.
TITLE OF INVENTION: Zlrr8, and Zlrr9
TILE REFERENCE: 01-27
CURRENT APPLICATION NUMBER: US/09/897,214
CURRENT FILING DATE: 2001-07-02
PRIOR APPLICATION NUMBER: 60/215,446
PRIOR FILING DATE: 2000-06-30
NUMBER OF SEQ ID NOS: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-768-826-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; NAME/KEY: CDS
; LOCATION: (1)...(1653)
US-09-897-214-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 4
US-09-897-214-7
                                                                                                                                                    Query Match
Best Local S
Matches 16
Sequence 189, Application US/10093463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 21, Application of Patent No. US20020012966A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 7, Application US Patent No. US20020076779A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/768,826
CURRENT FILING DATE: 2001-01-25
CURRENT FILING DATE: 2001-01-25
                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Shi et al.
TITLE OF INVENTION: 18
FILE REFERENCE: PF512P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 1653
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Homo sapiens
                                                                               1496 CGCTGCCGGCCTCGCC 1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33 CGCTGCCGGCCTCGCC 48
                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09897214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09768826
                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                               30.0%; F1
                                                                                                                                                                                                                                                                                                                                                                                                                                                         18 human secreted proteins
                                                                                                                                                                  30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 16; DB 9; Pred. No. 17;
                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                  DB 9;
17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                  Length 1872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zlrr7
                                                                                                                                                  Indels
                                                                                                                                                ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
APPLICANT: THATE: Naymond J. Jr.
APPLICANT: THADEST, Naymond J. Jr.
APPLICANT: Taupier, Naymond J. Jr.
TITLE OF INVENTION: No. US20030208039A1el Antibodies that Bind to Antigenic Polypept
FILE REFERENCE: 21407-290A (Cura 590AT)
CURRENT FILING DATE: 2002-06-24
PRIOR APPLICATION NUMBER: 00/203,675
PRIOR APPLICATION NUMBER: 60/283,675
PRIOR APPLICATION NUMBER: 60/283,675
PRIOR APPLICATION NUMBER: 60/283,092
PRIOR FILING DATE: 2001-04-14
PRIOR APPLICATION NUMBER: 60/274,281
PRIOR APPLICATION NUMBER: 60/274,281
PRIOR APPLICATION NUMBER: 60/274,101
PRIOR APPLICATION NUMBER: 60/274,101
PRIOR FILING DATE: 2001-03-08
PRIOR APPLICATION NUMBER: 60/325,681
PRIOR APPLICATION NUMBER: 60/325,681
PRIOR APPLICATION NUMBER: 60/325,681
PRIOR APPLICATION NUMBER: 60/325,681
PRIOR APPLICATION NUMBER: 60/304,354
PRIOR APPLICATION NUMBER: 60/304,354
                                                                                                                                                                                                                                                       PRIOR FILING DATE: 2001-05-31
PRIOR APPLICATION NUMBER: 60/287,424
PRIOR FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/299,027
PRIOR FILING DATE: 2001-06-18
PRIOR FILING DATE: 2001-07-31
PRIOR APPLICATION NUMBER: 60/281,194
PRIOR APPLICATION NUMBER: 60/281,194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Publication No. US20030208039A1 GENERAL INFORMATION:
        PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/279, 995
PRIOR FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: 60/294, 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Padigaru, APPLICANT: Shenoy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PPLICANT:
OR APPLICATION NUMBER: 60/274, 194
OR FILING DATE: 2001-03-08
OR APPLICATION NUMBER: 60/274, 849
OR APPLICATION NUMBER: 60/330, 380
OR APPLICATION NUMBER: 60/330, 380
OR FILING DATE: 2001-10-18
OR APPLICATION NUMBER: 60/275, 235
OR FILING DATE: 2001-03-12
OR APPLICATION NUMBER: 60/288, 342
OR APPLICATION NUMBER: 60/288, 342
OR APPLICATION NUMBER: 60/275, 578
OR APPLICATION NUMBER: 60/275, 578
                                                                                                                                                                                                                                 FILING DATE: 2001-07-31
APPLICATION NUMBER: 60/281,194
FILING DATE: 2001-04-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Burgess, Catherine
Liu, Xiaohong
Spytek, Kimberly
Gorman, Linda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shenoy, Suresh
Kekuda, Ramesh
Gusev, Vladimir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Spaderna, Steven
Voss, Edward
Malyankar, Uriel
Anderson, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zerhusen, Bryan
Tchernev, Velizar
Gangolli, Esha
Vernet, Corine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patturajan, Meera
Miller, Charles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zhong, mei
Rastelli, Luca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gerlach,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Guo,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Smithson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mezes, Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pochart,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pena,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Boldog, Ferenc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Xiaojia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Carol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stacie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Valerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Muralidhara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Glennda
```

```
APPLICANT: PARTURE 31, Meera
APPLICANT: Miller, Charles
APPLICANT: Miller, Charles
APPLICANT: Taupier, Raymond J. Jr.
APPLICANT: Taupier, Raymond J. Jr.
TITLE OF INVENTION: NO. US20030208039A1el Antibodies that Bind TITLE OF INVENTION: Encoding The Antigens, and Methods of Us:
FILE REFERENCE: 21402-290A (Cura 590AT)
CURRENT APPLICATION NUMBER: US/10/093,463
CURRENT FILING DATE: 2002-06-24
PRIOR FILING DATE: 2001-04-14
PRIOR APPLICATION NUMBER: 60/233,675
PRIOR APPLICATION NUMBER: 60/234,992
PRIOR APPLICATION NUMBER: 60/274,281
PRIOR FILING DATE: 2001-03-08
PRIOR APPLICATION NUMBER: 60/274,101
PRIOR APPLICATION NUMBER: 60/274,101
PRIOR APPLICATION NUMBER: 60/274,101
PRIOR APPLICATION NUMBER: 60/274,101
PRIOR APPLICATION NUMBER: 60/275,681
PRIOR APPLICATION NUMBER: 60/274, 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (471)..(2169)
US-10-093-463-189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-093-463-191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 370
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 189
LENGTH: 2451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 30.8%;
Best Local Similarity 100.0%;
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 191, /
Publication No
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Padigaru,
APPLICANT: Shenoy,
APPLICANT: Kekuda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Homo sapiens
APPLICATION NUMBER: 60/304,354 FILING DATE: 2001-07-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1966 CGCTGCCGGCCTCGCC 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L
L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Spytek, Kimberly
Gorman, Linda
Spaderna, Steven
Voss, Edward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zerhusen, Bryan
Tchernev, Velizar
Gangolli, Esha
Vernet, Corine
                                                                                                                                                                                                                                                                                                                                                                                                                                      Malyankar, Uriel
Anderson, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gerlach, Valeri
Casman, Stacie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shenoy, Suresh
Kekuda, Ramesh
Gusev, Vladimir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Burgess, Catherine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Boldog, Ferenc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Smithson, Glennda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mezes, Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zhong, Mei
Rastelli, Luca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pochart,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/10093463
o. US20030208039A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xiaohong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xiaojia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muralidhara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Valerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pascal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                              Bind to Antigenic Polypept
f Use.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
PRIOR FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: 60/294,899
PRIOR APPLICATION NUMBER: 60/287,424
PRIOR APPLICATION NUMBER: 60/287,424
PRIOR FILING DATE: 2001-04-30
PRIOR FILING DATE: 2001-06-18
PRIOR APPLICATION NUMBER: 60/299,027
PRIOR FILING DATE: 2001-07-31
PRIOR APPLICATION NUMBER: 60/291,194
PRIOR PRILING DATE: 2001-04-04
PRIOR FILING DATE: 2001-04-04
PRIOR FILING DATE: 2001-04-04
PRIOR APPLICATION NUMBER: 60/274,194
PRIOR APPLICATION NUMBER: 60/274,849
PRIOR APPLICATION NUMBER: 60/330,380
PRIOR FILING DATE: 2001-03-18
PRIOR APPLICATION NUMBER: 60/275,235
PRIOR APPLICATION NUMBER: 60/275,235
PRIOR FILING DATE: 2001-03-12
PRIOR APPLICATION NUMBER: 60/275,535
PRIOR FILING DATE: 2001-03-13
PRIOR FILING DATE: 2001-03-03
PRIOR PRIOR DATE: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
US-10-246-330-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                      SOFITTION 1
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-093-463-191
                                                                                                                                  US-10-246-330-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/10246330
Publication No. US20030166030A1
GENERAL INFORMATION:
APPLICANT: O'Toole, George A.
APPLICANT: Mah, Thien-Fah
TITLE OF INVENTION: METHODS TO STUDY AND MECHANISMS
TITLE OF INVENTION: BIOFILM-SPECIFIC ANTIBIOTIC RES
FILE REFERENCE: 14537-002001
CURRENT APPLICATION NOMBER: US/10/246,330
CURRENT FILING DATE: 2002-09-18
                                                                                                                                         LENGTH: 2610
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(2607)
         Matches
                                    Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local
                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/323,241
PRIOR FILING DATE: 2001-09-18
NUMBER OF SEQ ID NOS: 32
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens FEATURE:
NAME/KEY: CDS
LOCATION: (130)..(2464)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1679 CGCTGCCGGCCTCGCC 1694
   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33 CGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 100.0%;
                                       Similarity
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                    30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30.8%; Score 16; 100.0%; Pred. No.
      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 12;
                                    DB 12;
16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SMS OF
RESISTANCE
                                                              Length 2610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2563;
      <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
      Gaps
      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

ઇ

25 GCTCTCGTCGCTGCCG

```
PRIOR APPLICATION NUMBER: 60/274, 281
PRIOR FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/274, 281
PRIOR FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/274, 101
PRIOR APPLICATION NUMBER: 60/274, 101
PRIOR FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/325, 681
PRIOR FILING DATE: 2001-09-27
PRIOR PRIOR APPLICATION NUMBER: 60/279, 995
PRIOR APPLICATION NUMBER: 60/279, 995
PRIOR APPLICATION NUMBER: 60/279, 995
PRIOR APPLICATION NUMBER: 60/294, 899
PRIOR APPLICATION NUMBER: 60/287, 424
PRIOR FILING DATE: 2001-04-31
PRIOR APPLICATION NUMBER: 60/287, 424
PRIOR APPLICATION NUMBER: 60/289, 027
PRIOR APPLICATION NUMBER: 60/299, 027
PRIOR APPLICATION NUMBER: 60/281, 194
PRIOR APPLICATION NUMBER: 60/281, 194
PRIOR APPLICATION NUMBER: 60/281, 194
PRIOR APPLICATION NUMBER: 60/274, 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Patturajan, Meera
APPLICANT: Miller, Charles
APPLICANT: Miller, Charles
APPLICANT: Taupier, Raymond J. Jr.
TITLE OF INVENTION: Encoding The Antigens, and Methods of Use.
FILE REFERENCE: 21402-290A (Cura 590AT)
CURRENT APPLICATION NUMBER: US/10/093,463
CURRENT FILING DATE: 2001-04-14
PRIOR APPLICATION NUMBER: 60/283,675
PRIOR FILING DATE: 2001-04-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Padigaru,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICATION NUMBER: 60/274,849 FILING DATE: 2001-03-09
                                                    FILING DATE: 2001-03-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Burgess, car.
Tiu, Xiaohong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCTCGTCGCTGCCG 2562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gangolli, Esha
Vernet, Corine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zhong, Mei
Rastelli, Luca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shenoy, Suresh
Kekuda, Ramesh
Gusev, Vladimir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Spytek, Kimberly
Gorman, Linda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gerlach, Valer
Casman, Stacie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Malyankar, Uriel
Anderson, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Voss, Edward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Spaderna, Steven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pena, Carol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zerhusen, Bryan
Tchernev, Velizar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Boldog, Ferenc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Smithson, Glennda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pochart,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/10093463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US20030208039A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Xiaojia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Muralidhara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Catherine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Valerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pascal
```

```
RESULT 11
US-10-106-698-1931/c
US-10-106-698-1931/c
; Sequence 1931, Application US/10106698
; Publication No. US20030109690A1
; GENERAL INFORMATION:
; APPLICANT: Ruben et al.
; APPLICANT: Ruben et al.
                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Ver. 2
SEQ ID NO 638
LENGTH: 3947
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                     밁
                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                            US-09-925-300-638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-925-300-638/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-093-463-187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 638, Application US/09925300 Patent No. US20020151681A1 GENERAL INFORMATION:
                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                              Best Local
                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 100.
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/925,300
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05988
PRIOR FILING DATE: 2000-03-08
PRIOR PPLICATION NUMBER: 60/124,270
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Craig Rosen,
APPLICANT: Steve Ruben
TITLE OF INVENTION: Nucleic Acids, Proteins
FILE REFERENCE: PA101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR FILING DATE: 2001-03-13 NUMBER OF SEQ ID NOS: 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 60/288,342
PRIOR FILING DATE: 2001-05-03
PRIOR APPLICATION NUMBER: 60/275,578
                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (3738)
OTHER INFORMATION: n equals a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Homo sapiens FEATURE:
NAME/KEY: CDS
LOCATION: (471)..(2412)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: n equals a,t,g,
                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature LOCATION: (625)
                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 2001-10-18
APPLICATION NUMBER: 60/275,235
FILING DATE: 2001-03-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1966 CGCTGCCGGCCTCGCC 1981
                                                                                                                                                              19 CTCATCGCTCTCGTCG
                                                                                                                                                   72
                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33 cecrecceccicec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3201
                                                                                                                                                                                                         h 30.8%; Scotting 100.0%; P considerity 100.0%; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30.8%;
                                                                                                                                                                             34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 16; 
; Pred. No.
                                                                                                                                                                                                                           Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                         or
P
                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                             DB 10;
15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                          Length 3947;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 3201;
                                                                                                                                                                                                            Indels
                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
RESULT 13
US-09-878-574-15763/c
· Sequence 15763, Application US/09878574
                                                                                                                              밁
                                                                                                                                                                á
                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: a, t, c, US-09-294-093B-4207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; OTHER INFORMATION: n equals a,t,g, US-10-106-698-1931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-294-093B-4207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: PA005P1
CURRENT APPLICATION NUMBER: US/10/106,698
CURRENT FILING DATE: 2002-03-27
PRIOR APPLICATION NUMBER: PCT/US00/26524
PRIOR FILING DATE: 2000-09-28
PRIOR APPLICATION NUMBER: US 60/157,137
PRIOR FILING DATE: 1999-09-29
PRIOR APPLICATION NUMBER: US 60/163,280
PRIOR FILING DATE: 1999-11-03
NUMBER OF SEQ ID NOS: 8564
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
SOFTWARE: PERL E
SEQ ID NO 4207
LENGTH: 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4207, Application US/09294093B Patent No. US20010051335A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Ver. 3.0
SEQ ID NO 1931
LENGTH: 3953
                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Sherman, Bradley, K.
TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN TASSEL
FILE REFERENCE: PL-0009 US
CURRENT APPLICATION NUMBER: US/09/294,093B
CURRENT FILING DATE: 1999-04-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: PRIOR FILING DATE: April
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. US20010051335A1 700353417H1
NAME/KEY: unsure
LOCATION: 10, 37, 204
                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Zea mays
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature
LOCATION: (618)..(618)
OTHER INFORMATION: n equals
NAME/KEY: misc_feature
LOCATION: (626)..(626)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 100.
nes 16; Conservative
                                                                                                                              182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19 CTCATCGCTCTCGTCG 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72 CTCATCGCTCTCGTCG 57
                                                                                                                                                                                                  l Similarity
15; Conserv
                                                                                                                              ATGCAGTTCTCTCAC 196
                                                                                                                                                  ATGCAGTTCTCTCAC 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lalgudi, Raghunath, Ito, Laura, Y.
                                                                                                                                                                                                  28.8%; Score 15; DB 9; ilarity 100.0%; Pred. No. 80; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PERL Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UMBER: 60/082,567
April 21, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30.8%; Score 16; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6207
                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a, t, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                 or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 14; Length 3953;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                      <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ..
                                                                                                                                                                                                                                       Length 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                      Indels
                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
PRIOR APPLICATION NUMBER: 09/33,535
PRIOR FILING DATE: 1999-06-14
NUMBER OF SEQ ID NOS: 15775
SEQ ID NO 15763
LENGTH: 264
TYPE: DNA
ORGANISM: Glycine max
OTHER INFORMATION: Clone ID: 701070483H1
US-09-878-574-15763
RESULT 15
US-09-878-574-1259/c
US-09-878-574-1259/c
; Sequence 1259, Application US/09878574
; Patent No. US20020110548A1
· GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                       ; ORGANISM: Streptomyces avermitilis
FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(294)
US-10-156-761-711
                                                                                                                                                                      밁
                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
US-10-156-761-711/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
FURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-05-05
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROS
APPLICANT: SHIBA, TADAYOSH
                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 711
LENGTH: 294
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Byrum, Joseph R.
APPLICANT: La Rosa, Thomas J.
APPLICANT: Thompson, Michael D.
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated with
TITLE OF INVENTION: Plants
FILE REFERENCE 38-23(15401)B
CURRENT APPLICATION NUMBER: US/09/878,574
CURRENT FILING DATE: 2001-12-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. US20020110548A1
                                                                                                                                                                    143 TCGTCGCTGCCGGCC 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111 crcrccrcccrcccc
                                                                                                                                                                                                       29 regregerecegee 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26 crcrccrccrcccc 40
                                                                                                                                                                                                                                             ch 28.8%; Score 15; l Similarity 100.0%; Pred. No. 15; Conservative 0; Mismatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SHIBA, TADAYOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/10156761 o. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                               DB 14; Length 294; 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

밁 Ś

```
APPLICANT: Thompson, Michael D.
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated with
FILLE REFERENCE: 38-21(15401)B
FILLE REFERENCE: 38-21(15401)B
CURRENT APPLICATION NUMBER: US/09/878,574
CURRENT FILING DATE: 2001-12-21
FRIOR APPLICATION UNMBER: 09/333,535
PRIOR FILING DATE: 1999-06-14
NUMBER OF SEQ ID NOS: 15775
SEQ ID NO 1259
LENGTH: 336
TYPE: DNA
ORGANISM: Glycine max
OTHER INFORMATION: Clone ID: LIB3028-040-Q1-B1-A1
US-09-878-574-1259
                                                                                                                                                                                                                                                                                              RESULT 17
US-10-125-540-129
                                                                                                                                                                                                                                                                                                                                                                          밁
US-10-125-540-129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 16
US-09-764-870-129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-764-870-129
                                                                                                                                           GENERAL INFORMATION:
APPLICANT: ROSEN et al.
APPLICANT: ROSEN et al.
TITLE OF INVENTION: Nucleic Acids, Proteins,
FILE REFERENCE: PTZ14C1
CURRENT APPLICATION NUMBER: US/10/125,540
CURRENT FILING DATE: 2002-04-19
       Prior Application removed - See File Wrapper or Palm NUMBER OF SEQ ID NOS: 646
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 129
LENGTH: 357
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: ROSEN et al.
TITLE OF INVENTION: Nucleic Acids, Proteins,
FILE REFERENCE: PT214
CURRENT APPLICATION NUMBER: US/09/764,870
CURRENT FILING DATE: 2001-01-17
CURRENT FILING DATE: 2001-01-17
                                                                                                                                                                                                                                                      Sequence 129, Application US/10125540 Publication No. US20030059875A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 129
LENGTH: 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 129, Application US/09764870 Patent No. US20020042386A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Prior application data removed - consult PALM or file wrapper NUMBER OF SEQ ID NOS: 646 SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Byrum, Joseph R. APPLICANT: La Rosa, Thomas J. APPLICANT: Thompson, Michael D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                             y Match 28.8%; Sc
Local Similarity 100.0%; P
hes 15; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
nes 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                          102
                                                                                                                                                                                                                                                                                                                                                                                          1 ATGCAGTTCTCTCAC 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 CTCTCACGCTCTCAT 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 15; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 9;
74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 10; Length 336; 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                               and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
US-10-084-843-264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-084-843-264/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 18
                                                                             Matches
                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 264, Application US/10084843 Publication No. US20030143243A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                    TELEFAX: (206) 682-60: INFORMATION FOR SEQ ID NO: 264: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION NOWBER: US/10/084,843
FILING DATE: 25-Feb-2002
CLASSIFICATION: <Unknown>
                                                                           Local Similarity
les 15; Conserv
                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 21(
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
TELEFAX: '^^^
                                                                                                                                                                   TOPOLOGY: linear
MOLECULE TYPE: cDNA
SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/072,967
FILING DATE: 05-MAY-1998
ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Vedvick, Thomas S.

Twardzik, Daniel R.

Lodes, Michael J.

Hendrickson, Ronald C.

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR IMMUNOTHERAPY
AND DIAGNOSIS OF TUBERCULOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 355
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 102 ATGCAGTTCTCTCAC 116
 26
                                   30 CGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGCAGTTCTCTCAC 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
15; Conserv
CGTCGCTGCCGGCCT 12
                                                                                                                                                                                                                           TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                              LENGTH: 423 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: SEED and BERRY LLP STREET: 6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Seattle
                                                                   28.8%; Score 15; DB 12; Length 423; ilarity 100.0%; Pred. No. 73; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Reed, Steven G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Skeiky, Yasir A.W.
Dillon, Davin C.
Campos-Neto, Antonio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Houghton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28.8%; Score 15; DB 14; Length 357; 100.0%; Pred. No. 74;
                                                                                                                                                                                                                                                                                                                        682-6031
                                                                                                                                                                                                                                                                                                                                                                                210121.411C9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701 Fifth Avenue
                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

RESULT 19

밁

```
RESULT 20
US-10-259-678-60
; Sequence 60, Application US/10259678
; Publication No. US20030198974A1
                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE
; SEQUENCE
US-10-193-002-259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-193-002-259/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 259, A Publication No.
                                                                                                                                     GENERAL
                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
TITLE OF INVENTION: METHOD FOR ISOLATING A POLYNUCLEOTIDE OF INTEREST FROM TITLE OF INVENTION: THE GENOME OF A MYCOBACTERIUM USING A BAC-BASED DNA TITLE OF INVENTION: LIBRARY APPLICATION TO THE DETECTION OF MYCOBACTERIA
                                                         APPLICANT:
                                                                                              APPLICANT: Cole, Stewart APPLICANT: Buchrieser-B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 259:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: MAKI, DAVID J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 210121.417C9
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible operATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, 1 CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/10/193,002 PILING DATE: 10-Jul-2002 CIASCETICATION. "IPPLICATION"."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lodes, Michael J.

Hendrickson, Ronald C.

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR DIAGNOSIS OF
TUBERCULOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/072,596
FILING DATE: 05-MAY 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Reed,
                                                                                                                                 INFORMATION
                                                                                                                                                                                                                                                                 26
                                                                                                                                                                                                                                                                                                     30 CGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                          15;
                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                 CGTCGCTGCCGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 423 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear ULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: USA
                                                         Gordon, Stephen
Billault, Alain
                                                                                          Buchrieser-Brosch, Roland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/10193002
b. US20030135026A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                     DESCRIPTION: SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Houghton, Raymond
Vedvick, Thomas S.
Twardzik, Daniel R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Skeiky, Yasir A.W.
Dillon, Davin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Campos-Neto, Antonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Steven G
                                                                                                                                                                                                                                                                                                                                                          28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                     o.
                                                                                                                                                                                                                                                                                                                                                                                                                                     259:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          701
                                                                                                                                                                                                                                                                                                                                                          DB 12; Length 423; 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fifth Avenue
                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                      0,
```

```
문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-864-761-6099
                                                                                                                                        PRIOR FILLING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR APPLICATION NUMBER: GB 24263.6
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR FILLING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR FILLING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR APPLICATION NUMBER: PCT/US01/00667
PRIOR APPLICATION NUMBER: PCT/US01/00664
PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00669
PRIOR APPLICATION NUMBER: PCT/US01/00668
PRIOR APPLICATION NUMBER: PCT/US01/00668
PRIOR FILLING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR APPLICATION NUMBER: PCT/US01/00666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-259-678-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 6099, Appendix No. US200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: 3495-0169
CURRENT APPLICATION NUMBER: US/10/259,678
CURRENT FILING DATE: 2002-09-30
PRIOR APPLICATION NUMBER: US/09/060,756
PRIOR FILING DATE: 1998-04-16
NUMBER OF SEQ ID NOS: 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: Acomica-X-1
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Ver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 448
TYPE: DNA
ORGANISM: Mycobacterium tuberculosis
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: unsure LOCATION: (various positions within the sequence) OTHER INFORMATION: applicants are uncertain of bases designated
                                                                               OR APPLICATION NUMBER: PCT/US01/00663
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00662
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00661
OR FILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00670
OR APPLICATION NUMBER: PCT/US01/00670
OR APPLICATION NUMBER: PCT/US01/00670
OR FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                      OR PILING DATE: 2001-01-30
OR FILING DATE: 2001-01-30
OR PILING DATE: 2001-01-30
OR PPLICATION NUMBER: PCT/US01/00664
OR PILING DATE: 2001-01-30
OR APPLICATION NUMBER: PCT/US01/00669
OR FILING DATE: 2001-01-30
OR PILING DATE: 2001-01-30
OR PPLICATION NUMBER: PCT/US01/00668
OR PILING DATE: 2001-01-30
OR PPLICATION NUMBER: PCT/US01/00668
OR PILING DATE: 2001-01-30
OR PILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2000-10-04
APPLICATION NUMBER: US 60/236,359
FILING DATE: 2000-09-27
APPLICATION NUMBER: PCT/US01/00666
FILING DATE: 2001-01-30
APPLICATION NUMBER: US 60/234,687 FILING DATE: 2000-09-21 APPLICATION NUMBER: US 09/608,408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             352 TTCTCTCACGCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7 TICTCTCACGCTCTC 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09864761 0020048763A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 15; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 448;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
```

٥.

```
OTHER INFORMATION: MAP TO ACO04923.2
OTHER INFORMATION: EXPRESSED IN LING, S
OTHER INFORMATION: EXPRESSED IN LING, S
OTHER INFORMATION: EXPRESSED IN HELA, S
OTHER INFORMATION: EXPRESSED IN HEAL, S
OTHER INFORMATION: EXPRESSED IN BRAIN,
OTHER INFORMATION: EXPRESSED IN BONE MAP
OTHER INFORMATION: EXPRESSED IN FETAL I
OTHER INFORMATION: EXPRESSED IN ADULT I
OTHER INFORMATION: EXPRESSED IN BONE MAP
OTHER INFORMATION: EXPRESSED IN ADULT I
OTHER INFORMATION: EXPRESSED IN ADULT I
                                                                  밁
                                                                                                        Ś
RESULT 23
                                                                                                                                                                                                                                            ; ORGANISM: Human US-10-027-632-115584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-027-632-115584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-02-24
PRIOR FILING DATE: 2000-02-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 115584, Application US/10027632
Publication No. US20030204075A9
GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT FILING DATE: 2002-04-30
CURRENT FILING DATE: 2002-04-30
CURRENT FILING DATE: 2002-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 15
                                                                                                                                                       Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 115584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 49117
SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
SEQ ID NO 6099
                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR FILING DATE: 1999-11-23
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR FILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 09/774,203 PRIOR FILING DATE: 2001-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 2000-06-30
                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                              LENGTH: 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152 CGCTCTCATCGCTCT 166
                                                               48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15 CGCTCTCATCGCTCT 29
                                                                                                        25 GCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                               GCTCTCGTCGCTGCC
                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                   325720
                                                                                                                                                                          28.8%; Score 15; DB 12; Length 603; 100.0%; Pred. No. 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.8%; Score 15; DB 100.0%; Pred. No. 71 ive 0; Mismatches
                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DIN PLACENTA, SIGNAL = 10
DIN LUNG, SIGNAL = 16
DIN HELAR, SIGNAL = 13
DIN HEART, SIGNAL = 13
DIN BRAIN, SIGNAL = 12
                                                                                                                                                       <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BONE MARROW, SIGNAL = FETAL LIVER, SIGNAL = ADULT LIVER, SIGNAL =
                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 9;
. 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 481;
                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
14
                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>.</u>.
                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

```
GENERAL INFORMATION:

APPLICANT: ONURA, SATOSHI

APPLICANT: IKEDA, HARHO

APPLICANT: ISHIKAWA, JUN

APPLICANT: HORIKAWA, JUN

APPLICANT: SHIBA, TADAYOSHI

APPLICANT: SHIBA, TADAYOSHI

APPLICANT: SHIBA, TADAYOSHI

APPLICANT: HATTORI, MASAHIRA

TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES

FILE REFERENCE: 249-262

CURRENT APPLICATION NUMBER: US/10/156,761

CURRENT FILING DATE: 2002-05-29

PRIOR APPLICATION NUMBER: JP 2001-204089

PRIOR APPLICATION NUMBER: JP 2001-204089

PRIOR APPLICATION NUMBER: JP 2001-272697

PRIOR FILING DATE: 2001-08-02

NUMBER OF SEQ ID NOS: 15109
                                                                                                     ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(1113)
US-10-156-761-974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Human US-10-027-632-115584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-156-761-974/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US 60/218,006
PRIOR FILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 60/198,676
PRIOR FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: US 60/193,483
PRIOR FILING DATE: 2000-03-29
PRIOR APPLICATION NUMBER: US 60/185,218
PRIOR FILING DATE: 2000-02-24
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/167,363
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR APPLICATION NUMBER: US 60/156,358
PRIOR FILING DATE: 1999-09-28
PRIOR APPLICATION NUMBER: US 60/146,002
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 325720
SOFTWARE: FABESEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-027-632-115584
                                                                                                                                                                                                                                                    SEQ ID NO 974
LENGTH: 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION
          Matches
                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 974, Appropriate Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 115584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single Nucleotide
TITLE OF INVENTION: Polymorphisms in the Human Genome
FILE REFERENCE: 108827.129
CURRENT APPLICATION NUMBER: US/10/027,632
CURRENT FILING DATE: 2002-04-30
                                                                                                                                                                                                 ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENGTH: 603
                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48 GCTCTCGTCGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25 GCTCTCGTCGCTGCC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
       1 Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/10156761
       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/10027632
28.8%; Score 15; DB 14; Length 1113; 100.0%; Pred. No. 63; 1rdels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 15; DB 13; Length 603; Pred. No. 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

ş

29

43

```
CURRENT APPLICATION NUMBER: US/10/259,165
; CURRENT FILING DATE: 2002-09-26
; PRIOR APPLICATION NUMBER: US 60/370,620
; PRIOR FILING DATE: 2002-04-04
; PRIOR FILING DATE: 2002-03-27
; PRIOR FILING DATE: 2002-03-27
; PRIOR APPLICATION NUMBER: US 60/368,327
; PRIOR APPLICATION NUMBER: US 60/325,277
; PRIOR FILING DATE: 2001-09-26
; NUMBER OF SEQ ID NOS: 782
; SOFTWARE: PatentList.pl version 3.0.4 (C) 2001 Syngenta SEQ ID NO 279
; LENCTH: 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; TYPE: DNA
; ORGANISM: Oryza sativa
US-10-259-165-279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                              RESULT 26
US-10-037-270-168/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 25
US-10-259-165-279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                              Sequence 168, Appublication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Zhu, Tong
APPLICANT: Wang, Xun
APPLICANT: Chang, Hux
APPLICANT: Briggs, St
APPLICANT: Glazebrook
APPLICANT: Goff, Step
                                                                                                                                                                                                                                                                                                                GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 279, 1 Publication No.
          APPLICANT:
APPLICANT:
TITLE OF IN
                                                          APPLICANT:
                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                           APPLICANT: Tang, Y. L. APPLICANT: Liu, Chenghua APPLICANT: Liu, Chenghua Asundi, Vinod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Moughamer, Todd
APPLICANT: Provart, Nicholas
APPLICANT: Ricke, Darrell
TITLE OF INVENTION: GENES THAT ARE MODULATED BY POSTTRANSCRIPTIONAL GENE SILENCING
FILE REFERENCE: 70030-NP
                                                                                                                                             APPLICANT:
                                                                                                                                                                 APPLICANT:
                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                  INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      845
                                                                                                                                                                                                                                                                                                                                                                                                                                   88
                                                                                                                                                                                                                                                                                                                                                                                                                                                         32 TCGCTGCCGGCCTCG 46
f: Ma, Yunqing
f: Wang, Dunrui
f: Wang, Zhiwei
f: Tillinghast, John
f: Drmanac, Radoje T.
INVENTION: NO. US20030104529Alel Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGTCGCTGCCGGCC 831
                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGCTGCCGGCCTCG 102
                                                                                                                        Xue, Aidong J.
Yang, Yonghong
Wang, Jian-Rui
                                                                                                                                                                           Asundi, Vinod
Zhang, Jie
Ren, Feiyan
Chen, Rui-hong
Zhao, Qing A.
Wehrman, Tom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chang, Hur-song
Briggs, Steven P.
Cooper, Bret
                                                                                                        Zhou,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goff, Stephen A.
Katagiri, Fumiyaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glazebrook, Jane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kreps, Joel
                                                                                                                                                                                                                                                                                                                              Application US/10037270 b. US20030104529A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/10259165
D. US20030135888A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28.8%; Score 15; DB ilarity 100.0%; Pred. No. 63 Conservative 0; Mismatches
                                                                                                          . Ping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12; Length 1191;
       Acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
SEQ ID NO 780

LENGTH: 1389

TYPE: DNA
ORGANISM: Streptomyces avermitilis
FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(1389)
US-10-156-761-780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 1197
TYPE: DNA
ORCANISM: Homo sapiens
FEATURE:
NAME/KEY: CDS
LOCATION: (96)..(548)
US-10-037-270-168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/10/037,270
CURRENT FILING DATE: 2002-01-04
PRIOR APPLICATION NUMBER: 09/52,317
PRIOR FILING DATE: 2000-04-25
PRIOR APPLICATION NUMBER: 09/488,725
PRIOR FILING DATE: 2000-01-21
NUMBER OF SEQ ID NOS: 1104
SOFTWARE: pt FL_genes Version 1.0
SEQ ID NO 168
SEQ ID NO 168
      무
                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 27
US-10-156-761-780/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ą
                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROS
APPLICANT: SHIBA, TADAYOSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 780 Publication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 28.8%; Score 15; Best Local Similarity 100.0%; Pred. No. Matches 15; Conservative 0; Mismatci
                                                                                                                  Query Match
                                                                               Matches
                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Polypeptides FILE REFERENCE: 784CIP2B
                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 CTCATCGCTCTCGTC
780, Application US/10156761 ion No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19 CTCATCGCTCTCGTC 33
                                                                         h 28.8%; Score 15; DB 14; Length 1389; Similarity 100.0%; Pred. No. 61; 17. Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IKEDA, HARUO
ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14; Length 1197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
```

US-10-177-293-416/c
US-10-177-293-416/c
; Sequence 416, Application US/10177293
; Publication No. US20030124128A1
; GENERAL INFORMATION:

```
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILLING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILLING DATE: 2001-05-30
PRIOR FILLING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; ORGANISM: Homo sapiens US-10-177-293-416
                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-156-761-4461/c
                                                                                                                                                                                                                                                                                                                                                                          Sequence 4461, Application US/10156761 Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 506
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 416
LENGTH: 1404
                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
SEQ ID NO 4461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/299,887
PRIOR FILING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: US 60/301,572
PRIOR FILING DATE: 2001-06-27
PRIOR APPLICATION NUMBER: US 60/306,501
PRIOR FILING DATE: 2001-07-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Sahin, Aysegul
APPLICANT: Mills, Gordon B.
APPLICANT: Mills, Gordon B.
TITLE OF INVENTION: COMPOSITIONS, KITS, AND METHODS FOR IDENTIFICATION, ASSESSMENT, FILE OF INVENTION: PREVENTION, AND THERAPY OF BREAST CANCER
FILE REFERENCE: MRI-038
CURRENT APPLICATION NUMBER: US/10/177,293
CURRENT FILING DATE: 2002-06-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                          APPLICANT: OMURA, SATOSHI
APPLICANT: IKEDA, HARUO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US 60/325,002
PRIOR FILING DATE: 2001-09-25
PRIOR APPLICATION NUMBER: US 60/362,585
PRIOR FILING DATE: 2002-03-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 60/xxx,xxx PRIOR FILING DATE: 2002-05-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122 CTCATCGCTCTCGTC 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCATCGCTCTCGTC
                                                                                                                                                                                                                                                                     ISHIKAWA, JUN
HORIKAWA, HIROSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Myer, vic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Glatt, Karen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bast Jr., Robert C.
Hortobagyi, Gabriel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Monahan, John
Meyers, Rachel E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Meric, Funda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pusztai,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hoersch, Sebastian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mertens, Maureen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gannavarpu, Manjula
Kamatkar, Shubhangi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yongyao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Xumei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lajos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28.8%; Score 15; DB 14; Length 1404; 100.0%; Pred. No. 61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
Sequence 7070, Application US/10128714

Publication No. US20030119013A1

PublicANT UNFORMATION:

APPLICANT: Hu, Wenqi

APPLICANT: Hu, Wenqi

APPLICANT: Tishkoff, Daniel

APPLICANT: Eramudio, Carlos

APPLICANT: Eroshkin, Alexey M

APPLICANT: Lemieux, Sebastien M

APPLICANT: Lemieux, Sebastien M

TITLE OF INVENTION: Identification of Essential Genes in J

TITLE OF INVENTION: Methods of Use

FILE REFERENCE: 10182-018-999
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; NAME/KEY: CDS
; LOCATION: (1)..(1479)
US-10-156-761-4461
                                                                                                                                                                                                                                    RESULT 31
US-10-128-714-6070/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Aspergillus fumigatus US-10-128-714-7070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/10/128,714
CURRENT FILING DATE: 2002-04-23
PRIOR APPLICATION NUMBER: US 60/285,697
PRIOR FILING DATE: 2001-04-3
PRIOR FILING DATE: 2001-04-3
PRIOR FILING DATE: 2001-04-27
PRIOR APPLICATION NUMBER: US 60/295,890
PRIOR FILING DATE: 2001-06-05
PRIOR FILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 60/303,899
PRIOR FILING DATE: 2001-07-09
PRIOR APPLICATION NUMBER: US 60/316,362
PRIOR APPLICATION NUMBER: US 60/316,362
PRIOR APPLICATION NUMBER: US 60/316,362
PRIOR FILING DATE: 2001-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U~-10-128-714-7070/c
                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn version 3.1
SEQ ID NO 7070
LENCTH: 1554
TYPE: DNA
                                                                                                                                                                                             Sequence 6070, Application US/10128714 Publication No. US20030119013A1
APPLICANT: Jiang, Bo
APPLICANT: Hu, Wengi
APPLICANT: Tishkoff, Daniel
APPLICANT: Zamudio, Carlos
APPLICANT: Zamudio, Carlos
APPLICANT: Eroshkin, Alexey M
APPLICANT: Lemieux, Sebastien M
APPLICANT: Lemieux, Sebastien M
TITLE OF INVENTION: Identification of Essential Genes in Aspergillus fumigatus and
                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 8603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Streptomyces avermitilis FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                        1384 CGCTCTCGTCGCTGC 1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1258 TCTCGTCGCTGCCGG
                                                                                                                                                                                                                                                                                                                                                              24 CGCTCTCGTCGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27 TCTCGTCGCTGCCGG 41
                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity 100
15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28.8%; Sc.
/ 100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                             28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1244
                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 15; DB 14; Length 1479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                             DB 14; Length 1554; 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in Aspergillus fumigatus and
                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
밁
                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Aspergillus fumigatus US-10-128-714-6070
                                                                                                                                  ; ORGANISM: Penicillium chrysogenum US-09-801-368-235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loc
Matches
                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 60/160,587
PRIOR FILING DATE: 199-10-20
NUMBER OF SEQ ID NOS: 440
SOFTWARE: PatentIn version 3.0
SEQ ID NO 235
LENCYM. 1923
                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn version 3.1
SEQ ID NO 6070
LENGTH: 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                               APPLICANT: Summers, Eric
TITLE OF INVENTION: Methods for Improving Secondary Metabolite Production in Fungi
FILE REFERENCE: 109272.147
CURRENT APPLICATION NUMBER: US/09/801,368
CURRENT FILING DATE: 2001-03-07
PRIOR APPLICATION NUMBER: US 09/487,558
PRIOR PILING DATE: 2000-01-19
PRIOR FILING DATE: 2000-01-19
                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/295,890
PRIOR FILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 60/303,899
PRIOR FILING DATE: 2001-07-09
PRIOR APPLICATION NUMBER: US 60/316,362
PRIOR FILING DATE: 2001-08-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 2001-08-31
NUMBER OF SEQ ID NOS: 8603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-801-368-235/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 60/287,066
PRIOR FILING DATE: 2001-04-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US 60/285,697
PRIOR FILING DATE: 2001-04-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILE REFERENCE: 10182-018-999
                                                                                                                                                                  LENGTH: 1932
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1608 CGCTCTCGTCGCTGC 1594
1024 TCTCATCGCTCTCGT 1010
                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           235, Application US/09801368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24 CGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/10/128,714 FILING DATE: 2002-04-23
                                                                 l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hecht, Peter
Holtzman, Doug
Madden, Kevin
Maxon, Mary
Milne, Todd
No. US20020128250Alman, T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US20020128250A1
                               rerearcecrerer 32
                                                                                                                                                                                                                                                                                                                                                                                                                                    Royer, John
Salama, Sofie
                                                                                                                                                                                                                                                                                                                                                                                                    Sherman, Amir
Silva, Jeff
                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative 0;
                                                          28.8%; bu
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28.8%; Score 15; 100.0%; Pred. No.
                                                                             Score 15;
Pred. No.
                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                 DB 10;
59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 14; Length 1778; 59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                 0
                                                                                               Length 1932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                             Gaps
                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
APPLICANT: Kreps, Jeff
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Dhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2000-08-24
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR TILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 2978
á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                        ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(2412)
US-10-156-761-158
                                                                                                                                                                                                                                                                                              APPLICANT: ISHIGAWA, HIROSHI
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
FULE RAPPLICATION NUMBER: US/10/156,761
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEC 1500-08-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 34
US-10-156-761-158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-938-842A-2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-938-842A-2978
                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 158
LENGTH: 2412
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: OMURA, S
APPLICANT: IKEDA,
APPLICANT: ISHIKAI
APPLICANT: HORIKAI
                                            Matches
                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 158, A
Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2978, Application US/09938842A Patent No. US20020160378A1
                                                                                                                                                                                                   ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENGTH: 2000
                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1490 TCTCTCACGCTCTCA 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15;
    28 CTCGTCGCTGCCGGC 42
                                          l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 TCTCTCACGCTCTCA 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/10156761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ilarity 100.0%;
Conservative (
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SATOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HARUO
                                 28.8%; 5C
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                        Score 15;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                          Mismatches
                                                          DB 14;
. 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>,,</u>
                                                                             Length 2412;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2000;
                                        Indels
                                     ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

밁

1471 CTCGTCGCTGCCGGC 1485

US-09-815-242-4138

GENERAL INFORMATION:

Patent No.

4138, App o. US20020

Application US/09815242)020061569A1

```
RESULT 36
US-09-374-046A-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-815-242-4138
                                                                                                                                                                                                                                                                                                                                          Sequence 125, Publication No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version SEQ ID NO 4138
                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                   APPLICANT: Jacobs, Kenneth
APPLICANT: McCoy, John M.
APPLICANT: LaVallie, Edward R.
APPLICANT: Collins-Racie, Lisa
APPLICANT: Evans, Cheryl
                                                                                         APPLICANT: Steininger II, Robert J.
APPLICANT: Spaulding, Vikki
APPLICANT: Wong, Gordon G.
APPLICANT: Clark, Hilary
                                                                                                                                                                  APPLICANT: Merberg, David
APPLICANT: Treacy, Maurice
APPLICANT: Agostino, Michael J.
CURRENT APPLICATION NUMBER: US/09/374,046A
                   APPLICANT: Genetics Institute, Inc.
TITLE OF INVENTION: SECRETED PROTEINS AND POLYNUCLEOTIDES ENCODING
FILE REFERENCE: GI 6075-83A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE R. FERENCE: ELITRA. 011A
CURRENT APPLICATION NUMBER: US/09/815,242
CURRENT FILING DATE: 2001-03-21
                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 14110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 60/191,078
PRIOR TILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Yamamoto, Robert T.
APPLICANT: Xu, H. Howard
TITLE OF INVENTION: Identification of Essential Genes
TITLE OF INVENTION: Prokaryotes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Haselbeck, Robert APPLICANT: Ohlsen, Kari L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH: 2454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 2000-10-23
APPLICATION NUMBER: 60/253,625
FILING DATE: 2000-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/207,727 FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 60/242,578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/269,308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/257,931
                                                                                                                                                                                                                                                                                                                                                                                                                                                         12 CGTCGCTGCCGGCCT 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30 cercecrecceser 44
                                                                           Fechtel, Kim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Trawick, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zyskind, Judith W.
                                                                                                                                                                                                                                                                                                                                          Application US/09374046A
o. US20030096951A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELITRA.011A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ., Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28.8%; Score 15; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                             Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2454;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۰,
                                 THEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
PRIOR FILING DATE: 2000-09-26
PRIOR FILING DATE: 2000-09-26
PRIOR APPLICATION NUMBER: US/60/235,731
PRIOR FILING DATE: 2000-09-27
PRIOR APPLICATION NUMBER: US/60/235,720
PRIOR FILING DATE: 2000-09-27
PRIOR APPLICATION NUMBER: US/60/235,720
PRIOR APPLICATION NUMBER: US/60/235,720
PRIOR APPLICATION NUMBER: US/60/235,720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NUMBER OF SEQ ID NOS: 240
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 125
; LENGTH: 2672
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-374-046A-125
                                                                                                              RESULT 38
US-09-967-768A-182/c
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                           US-09-954-456-518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/954,456
CURRENT FILING DATE: 2001-09-18
PRIOR APPLICATION NUMBER: US/60/233,617
PRIOR FILING DATE: 2000-09-18
PRIOR APPLICATION NUMBER: US/60/234,052
PRIOR APPLICATION NUMBER: US/60/234,923
PRIOR APPLICATION NUMBER: US/60/234,923
PRIOR APPLICATION NUMBER: US/60/234,923
PRIOR APPLICATION NUMBER: US/60/235,134
PRIOR APPLICATION NUMBER: US/60/235,134
PRIOR FILING DATE: 2000-09-25
PRIOR FILING DATE: 2000-09-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-954-456-518/c
Sequence 182, Application US/09967768A
Patent No. US20020150877A1
GENERAL INFORMATION:
APPLICANT: Augustus, Meena
TITLE OF INVENTION: Cancer Gene Determination and Therapeutic Screening Using Signat
                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn version 3.0
SEQ ID NO 518
LENGTH: 2790
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 518, Application Patent No. US20020115057A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US/60/235,840
PRIOR FILING DATE: 2000-09-27
PRIOR APPLICATION NUMBER: US/60/235,863
PRIOR FILING DATE: 2000-09-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Young, Paul
TITLE OF INVENTION: Process
TITLE OF INVENTION: Sets
FILE REFERENCE: 689290-76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: US/60/235,637
PRIOR FILING DATE: 2000-09-26
PRIOR APPLICATION NUMBER: US/60/235,638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT FILING DATE: 1999-08-13
                                                                                                                                                                                                                                                                              Local Similarity 100.0%; Pred. No. 15; Conservative
                                                                                                                                                                                                       984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           153 CTCTCATCGCTCTCG 167
                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17 CTCTCATCGCTCTCG 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                     CGCTCTCATCGCTCT 970
                                                                                                                                                                                                                                             CGCTCTCATCGCTCT 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/09954456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for Identifying Anti-Cancer Therapeutic Agents Using Car
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 15; Pred. No.
                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 11;
                                                                                                                                                                                                                                                                                                                          Length 2790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2672;
                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
CURRENT APPLICATION NUMBER: US/60/236,109
CURRENT PILING DATE: 2001-09-28
PRIOR APPLICATION NUMBER: US/60/236,109
PRIOR FILING DATE: 2000-09-28
PRIOR FILING DATE: 2000-09-28
PRIOR FILING DATE: 2000-09-28
PRIOR APPLICATION NUMBER: US/60/236,034
PRIOR APPLICATION NUMBER: US/60/236,111
PRIOR FILING DATE: 2000-09-28
PRIOR FILING DATE: 2000-09-28
PRIOR FILING DATE: 2000-09-28
SOFTWARE: PACENTIAL PACENTIAL PACENTIAL CONTROL OF SEQ ID NO 182
LENGTH: 2790
TYPE: DNA
ORGANISM: Homo sapiens
US-09-967-768A-182
RESULT 40
US-09-822-846-197
; Sequence 197, Application US/09822846
                                                                                                                                      ₽
                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Aspergillus fumigatus
US-10-128-714-70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 39
US-10-128-714-70/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/10/128,714
CURRENT FILING DATE: 2002-04-23
PRIOR APPLICATION NUMBER: US 60/285,697
PRIOR FILLING DATE: 2001-04-23
PRIOR APPLICATION NUMBER: US 60/287,066
PRIOR FILING DATE: 2001-04-27
PRIOR APPLICATION NUMBER: US 60/295,890
PRIOR FILING DATE: 2001-06-05
PRIOR FILING DATE: 2001-06-05
PRIOR FILING DATE: 2001-07-09
PRIOR APPLICATION NUMBER: US 60/303,899
PRIOR FILING DATE: 2001-07-09
PRIOR FILING DATE: 2001-07-09
                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2001-08-31
NUMBER OF SEQ ID NOS: 8603
SOFTWARE: PatentIn version 3.1
SEQ ID NO 70
LENGTH: 3140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 28.8
Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 70, Application US/10128714
Publication No. US20030119013A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Jiang, Bo
APPLICANT: Hu, Wengi
APPLICANT: Tishkoff, Daniel
APPLICANT: Tishkoff, Carlos
APPLICANT: Zamudio, Carlos
APPLICANT: Eroshkin, Alexey M
APPLICANT: Lemieux, Sebastien M
TITLE OF INVENTION: Identification of Essential Genes in Aspergillus fumigatus and
TITLE OF INVENTION: Methods of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR FILING DATE: 2001-07-09
PRIOR APPLICATION NUMBER: US 60/316,362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Sets FILE REFERENCE: 689290-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: 10182-018-999
                                                                                                                                      2608 CGCTCTCGTCGCTGC 2594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     984 CGCTCTCATCGCTCT 970
                                                                                                                                                               24 CGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15 CGCTCTCATCGCTCT 29
                                                                                                                                                                                                                             28.8%; Score 15; DB 14; Length 3140; ilarity 100.0%; Pred. No. 55; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28.8%; Score 15;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2790;
                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
Search completed: November 13, 2003, 11:54:39 Job time: 246 secs
                                                                   ₽
                                                                                                 Ś
                                                                                                                                                                                                    US-09-822-846-197
                                                                                                                                                                                                            APPLICANT: Genetics Institute, Inc.
TITLE OF INVENTION: POLYNUCLEOTIDES ENCODING NOVEL SECRETED PROTEINS
FILE REFERENCE: GIN 6400
CURRENT APPLICATION NUMBER: US/09/822,846
CURRENT FILING DATE: 2001-03-29
PRIOR APPLICATION NUMBER: 60/195,605
PRIOR PRILING DATE: 2000-04-06
NUMBER OF SEQ ID NOS: 629
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 197
LENGTH: 3323
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Publication No. US20030027139A1
GENERAL INFORMATION:
                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Jacobs, Kenneth
APPLICANT: McCoy, John M.
APPLICANT: LaVallie, Edward R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                Local
                                                               153 CTCTCATCGCTCTCG 167
                                                                                                 17 CTCTCATCGCTCTCG 31
                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                      Gulukota, Kamalakar
Graham, James R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clark, Hilary
Fechtel, Kim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Agostino, Michael J.
Steininger II, Robert J.
Bowman, Michael R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Merberg, David
Treacy, Maurice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Howes, Steven H. Resnick, Richard J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Spaulding, Vikki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Collins-Racie, Lisa A. Evans, Cheryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ong, Gordon G.
                                                                                                                                  Conservative
                                                                                                                                28.8%; Score 15; DB 11; Length 3323; 100.0%; Pred. No. 54; tive 0; Mismatches 0; Indels (
                                                                                                                                0
                                                                                                                                Gaps
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Listing first 1000 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic -
                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seg length: 0 seg length: 2000000000
                   52
52
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic search, using sw model
                                                                                                                 %
Query
Match
                 100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5:
6:
7:
7:
10:
112:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OLIGO_NUC
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                November 13, 2003, 09:41:06 ; Search time 1948 Seconds (without alignments) 648.785 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22781392 seqs, 12152238056 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 atgeagtteteteaegetet.....egetgeeggeetegeeagtg 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb est1:
gb est2:
gb est2:
gb est3:
gb est4:
gb est5:
gb est5:
gb est6:
gb est7:
gb est7:
gb est7:
em est6:
em est7:
em 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_estov:*
em_estpl:*
em_estro:*
                                                                                                                                                                                                                                                                                               em_gss_mus:
em_gss_mus:
em_gss_rod:
em_gss_phg:
em_gss_phg:
em_gss_vrl:
em_gss_vrl:
gb_gssl:
gb_gss2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_estin: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_esthum: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_estmu:•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estba:*
                                                                                                                   Length
                 395
401
531
557
                                                                                                                     DB
                   100
                                                                                                                     ij
                 BF251279
BF252856
BF251334
BF252723
                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45562784
            BF251279 EST418539
BF252856 EST420119
BF251334 EST418594
BF252723 EST419986
                                                                                                             Description
                                                                                                                                  ი
                                                                                                                                                                                              იი
                                                                                                                                                                                                                                               0000000
                                                                                                                                                                                                                                                                                                                                                                                                                       000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0 0 0 0 0 0 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     იი
            100
44.
36.
        812
822
839
960
979
979
1013
1109
11654
1147
1147
1143
1172
1188
260
260
263
331
                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
13
13
9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG163853
B1568671
B1583892
B1563323
B1263323
CNS01736
CNS01736
CNS01478
CNS
                                                                                                                                                                                                                                                                                                                                                                                                                  AV5988643
AV597173
AV61400191
AV614001
AV662793
AV662793
AV662793
AV662793
BU044311
BE7765793
BQ162104
CD258290
BQ162104
CD258290
CD49184
BCH258290
CD49184
BCH258290
CD49184
CD58290
CD49184
BCH258290
CD49184
CD58290
CD49187
COMPART COMPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AU163553
AU166766
AU031845
AQ510461
CB684405
CB939902
BE039817
                                                                                                                                                                                                                                                                                                                CNS01EMC
CNS078HZ
BM470883
CNS03R1A
AU16353 AU16353
AU166766 AU016766
AU001845 AU0164766
AU001845 AU0164766
AU001845 AU001845
AQ510461 nbxb00958
CB6804005 OSJNEf130
CB939902 IPCGJX14
BE039817 OCO8E11 \(\bar{O}\)
BG153853 602343204
AQ845447 LMAJFV1 \(\bar{O}\)
BG153853 602343204
AQ845447 LMAJFV1 \(\bar{O}\)
BG153853 602343204
AQ845447 LMAJFV1 \(\bar{O}\)
BG153853 CCO8E11 \(\bar{O}\)
BG153853 CCO8E11 \(\bar{O}\)
BG153853 RH67006 \(\bar{O}\)
BG153853 RH67006 \(\bar{O}\)
BG1538392 RH22614 \(\bar{O}\)
BG1588671 RH40331 \(\bar{O}\)
BG1588671 RH40331 \(\bar{O}\)
BG1588671 RH40331 \(\bar{O}\)
BG1588673 RH67006 \(\bar{O}\)
BG1588673 RH67006 \(\bar{O}\)
BG1588673 RH67006 \(\bar{O}\)
BG1588673 RH67006 \(\bar{O}\)
BG104246 Drosophil
BH104246 Drosophil
BH104246 Drosophil
BH103995 107080018
BH103995 10708019
BH004574 1613456 A
AW465276 BP230018
AW665273 AV668034
AW665273 AV668034
AW665273 AV668034
AW665273 AV668034
AW662793 AV668034
AW662793 AV668034
AW7614001 AV664001
BH1044311 PP_LEBA001
BH104431 PP_LEBA001
BH104430 PP_LEBA001
BH104405 PPA01440
BH104772 PPA01440
BH104772 PPA01440
BH104772 PPA01440
BH10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BF251103 EST418360
BQ499065 EST08290
BP112708 BP112708
```

0 00 0000 0 0000 0000 00000 0 0 0000000	C 811 C 881 C 882
391 391 396 412 412 412 412 412 412 412 412 412 412	352 376 381 381 386 387
9 AV4186 9 AV429 9 AV429 13 AV4146 12 BH394 12 BH394 14 BH394 15 BH394 16 BH394 17 BH396 18 BH396 18 BH396 19 AV4213 10 BF765 10 BE666 11 CF666 11 CF6666 11 CF6666 12 BH396 13 BH396 14 CCD046 15 BH396 16 BH396 17 BH396 18 BH396 18 BH396 18 BH396 19 AV4213 10 BE6666 11 CF6666 11 CF66666 11 CF66666 12 CF66666 13 CF666666 14 CF666666 15 BH3966666 16 CF66666666666666666666666666666666666	2008000
20	023345 7154769 1054345 1064345 10646009 106927 1069377
AV418656 AV418656 AV418656 AV418656 AV418675 AV418675 AV422875 AV422875 AV422875 AV422875 AV422875 AV422875 AV422875 AV414607 AV414607 BV442727 mgmk013xC AV407733 AV407733 AV409199 AV409199 AV424304 AV414050 BV3686761 mgns001x BY3789 Y0793406, r1 BH195324 TC3-75F21 BH195324 TC3-75F21 BH19532614 AL932614 BH070796 AG-ND-145 BE606956 WHE0914 H BE599468 PI1_87-H BE599468 LG1_29_G BF765337 RC1-CT027 CD421357 wdk9n.pk0 BH383883 AG-ND-159 AW564386 LG1_29_G CD03916 psHB035xC BM371104 EBr004-SQ BM371104 EBr004-SQ BM371105 EBr004-SQ BM371105 EBr004-SQ BM371106 EBr004-SQ BM371106 EBr004-SQ BM371106 EBr004-SQ BM371106 EBr004-SQ BM371106 EBr004-SQ BM371106 EBr006-SX BH663186 mgcs005xJ BH226976 1006114C0 CD04248 psHB035xC BM37106 BC311006E1 BH231622 35261 51 BH231622 35261 51 BH231622 35261 51 BH231622 35261 51 BH231622 60231461 BC259080 WHE2888 ABG BG472574 60251336 CD046C0 CD04226 psHB031xC CD04226 psHB031xC CD04226 psHB035xC BH16031 G00531 H CD03323 B Mgmt012xC CD042248 psHB035xC BH31602 G0231461 BC25906 G02631461 BC25906	B10233 BQ7547 BG0543 AQ846C BM8269 BE4005
56 AV418 56 AV418 56 AV418 57 AV418 58 AV418 59 AV419 70 AV414 71	145 CM4- 769 EBed 145 OV2 109 LMAJ 177 AWBO
9 1 3 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	MT024 01 SQ 3 B06 70099 05.E0
G G G G G G G G G G G G G G G G G G G	
	151 152 153 154 155 155 155
11111111111111111111111111111111111111	151 16 30. 152 16 30. 153 16 30. 154 16 30. 155 16 30. 156 16 30.
158 166 166 30.8 656 166 166 166 166 166 166 166 166 166	151 16 30.8 621 152 16 30.8 632 153 16 30.8 635 154 16 30.8 635 155 16 30.8 645 156 16 30.8 645
158 166 30.8 655 144 165 166 30.8 655 121 166 166 30.8 655 121 166 166 30.8 655 121 166 166 30.8 655 121 167 168 168 168 168 168 177 168 168 168 177 178 168 168 168 179 168 168 179 168 168 168 179 179 168 168 168 179 179 168 168 179 179 168 168 179 179 168 179 179 179 179 179 179 179 179 179 179	151 16 30.8 621 9 152 16 30.8 632 9 153 16 30.8 635 14 154 16 30.8 645 28 156 30.8 646 28 157 16 30.8 646 14
158 166 30.8 655 144 165 166 30.8 655 121 166 166 30.8 655 121 166 166 30.8 655 121 166 166 30.8 655 121 167 168 168 168 168 168 177 168 168 168 177 178 168 168 168 179 168 168 179 168 168 168 179 179 168 168 168 179 179 168 168 179 179 168 168 179 179 168 179 179 179 179 179 179 179 179 179 179	151 16 30.8 621 9 152 16 30.8 632 9 153 16 30.8 635 14 154 16 30.8 645 28 156 30.8 646 28 157 16 30.8 646 14
158	151 16 30.8 621 9 AW395638 152 16 30.8 632 9 AW067277 153 16 30.8 635 14 CA730681 154 16 30.8 638 14 CD042724 155 16 30.8 645 28 BH379753 156 30.8 646 14 CA014362
15.5. 15.5.	151 16 30.8 621 9 AW395638 A 152 16 30.8 632 9 AW067277 A 153 16 30.8 635 14 CA730681 154 16 30.8 638 14 CD042724 155 16 30.8 645 28 BH37973 156 10 8 646 14 CA014362
158	151 16 30.8 621 9 AW395638 AW395638 152 16 30.8 632 9 AW067277 AW067277 CA730681 CA730681 CD042724 CD042724 CD042724 CD042724 S16 30.8 635 14 CD042724 CD042724 S155 16 30.8 645 28 BH379753 BH379753 CA014362 CA014362 CD4623179

00 00 00 00 00 00 00 00 00 00 00 00 00	
555555555555555555555555555555555555555	,
22222222222222222222222222222222222222	>
945 958 958 978 978 978 978 978 978 978 978 978 97) 1
	;
BRIL1946 CCC008113 BM04337641 BM04337641 BM043370215 BM043370216 BM043370216 BM043370216 BM043370216 BM043370216 BM043370216 BM043370216 BM043370216 BM043370216 BM0433702 BM043370	!
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	,
2613136 6 6 6 6 6 6 6 7 7 7 8 7 8 7 8 7 8 7 8	
BM816946 HB106H03 CC0008109 PUGKD25TE BE885719 601508931 AL243336 Tetraodon BM043376 603619716 BU526783 AGENCOURT BM915392 AGENCOURT BC066716 AGENCOURT BC06716 BC0716 BC071	1
CO COC CO COC COC COC COC COC COC COC C	
	i
N N N N N N N N N N N N N N N N N N N	
22222222222222222222222222222222222222	
B. 327 10 BE923673 B. 339 11 T14455 B. 339 10 BE923673 B. 339 11 BE92373 B. 341 10 BE7473322 B. 342 10 BE723637 B. 345 12 BM501675 B. 345 12 BM501675 B. 345 12 BM501675 B. 354 29 CNS010p0 B. 353 14 CNA33716 B. 356 9 AA280978 B. 356 14 CNS010p0 B. 351 13 BY03626 B. 361 13 BY03626 B. 362 12 BM501677 B. 382 12 BM501677 B. 382 12 BM501677 B. 383 12 LB BF02129 B. 399 12 BE633295 B. 399 12 BE633295 B. 399 14 CCD265366 B. 399 14 CCD265366 B. 399 19 AV541379 B. 399 10 BE663329 B. 401 14 W99563 B. 406 12 BM499757 B. 408 28 BH222604 B. 410 13 BV036262 B. 425 10 BE663329 B. 425 10 BE663329 B. 431 12 BM499757 B. 445 9 AV548389 B. 441 12 BM4949757 B. 445 9 AV548389 B. 446 10 BE705056 B. 447 12 BM499758 B. 448 13 BU050323 B. 441 12 BM751197 B. 445 9 AV540333 B. 446 10 BE245021 B. 447 9 AV52336 B. 447 13 BW195466 B. 476 13 BW195466 B. 476 13 BW195466 B. 476 13 BW195466 B. 476 13 BW195466 B. 478 12 BW9522657 B. 488 110 BE253596 B. 478 12 BW9522962 B. 478 13 BW195466 B. 478 12 BW9522962 B. 478 12 BW952296 B. 478 12 BW952296 B. 478 12 BW952296 B. 478 12 BW952296 B.	

4444335 444337 444439 4440	C 428 C 429 C 430 C 431 C 432		409 410 411 6 412 6 414 6 416 6 418		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
		ຑຑຑຑຑຑຑ ຑ	ၯၯၯၯၯၯၯ ၯ			
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
544 544 547 547 547 549	540 540 542 542	55555555555555555555555555555555555555	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	511 514 515 516 516 516 516 522		4 4 8 3 3 4 8 3 3 4 8 3 3 4 8 3 3 3 4 8 3 3 3 4 8 3 3 4 8 3 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 8 3 4 4 8 3 4 4 8 3 4 4 4 8 3 4 4 4 4
					228 BF	
1196790 223795 2777330 1379527 1476697 1476697 1978892 1554357 1043182	1269499 1420007 1510277 1706613 1706613 1420939 1123796	1443265 1443265 13051713 128987 127783 1273897 1037498 147H09P	293126 261293126 2556115 2619403 819403 770925 770925 770925 770925 770925	811275 995405 995829 995829 99583 99583 995829 9048599 9048590 9048590 9048590 9048590	BH638580 BH638580 BG750010 CB375410 CB375410 CB375410 CB375410 CB375410 CB375410 BG2265797 AW249049 BW2651374 AL036071 BW6651374 AL036071 BW6651374 AL036478 BH3234478 BH3234478 BH3234478 BH3234478 BH3234468 CC162677 BE802749 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ142109 AZ14210	1394006 737204 110695 146689 1162647
BJ196 AU0237 BF777 BM379 BU476 BU978 BU978 BU554 CC043	BE269 BM420 AQ510 BG706 BF569 BM420 BM420	CA4273 BG051 AV5289 AW1077 BX273 CD032 AL454	BJ293 AZ612 BJ556 BE686 AQ619 AI7709 BM259 BM259 BU049 BJ560	BI811 AW7054 BF951 BI995 CD425 BJ560 BP124 BP124 BP048 BP048 BP048 BP048 BP048 BP048 BP048 BP048 BP048	BH638 BH638 BG7896 GG752 BG7652 BG2652 BG2652 BW2490 BW2490 BW6611 BH3944 CC16234 CC16234 BC1394 CC16234 BC1394 CC16234 BC1394 CC16234 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC1603 BC16	BH394 AI7372 AW4106 AW4466 BJ162 BJ159
790 BJ 95 AU03 330 NX 527 MES 527 MES 692 HA 357 BJ 182 359	499 60 007 R0 277 nb 613 60 902 60 939 U0	265 UI 713 FM 713 FM 87 AV5 83 ul9 83 ul9 897 BX 897 BX 498 mgr 239 T	126 BJ 852 1M 115 BJ 115 BJ 673 UW 673 UW 673 UW 1673 UW 1673 UW 175 BJ 175 BJ 175 BJ	275 MO 05 sk4 808 UI 829 10 973 SA 953 BJ 953 BJ 590 95 610 RP 022 NF 28 sf4	8580 100803300 8580 100803300 86229 RPCI-24-1 0010 602708766 5410 rw06e06.y 5410 rw06e06.y 5266 HS 3252 8679 100008120 879 100008120 870 180253701 1370 180253701 1370 180253701 1370 1802564F 4788 SSI 18 BO 10 DKFZD564F 4788 SSI 18 BO 11 B BO 11 B BO 12 SP 1010 P 2179 SP 0010 P 2179 SP 0010 3665 UI-CF-FNO 3665 U	006 AG 04 6060 95 fho 95 8670 89 8670 647 BJ
196790 23795 SI 067 ST506-C 14703r 554357 91 1 19 2010G02	118470 22802 ( 22802 ( xb0095) 267410 267410 2185849 2185849	273897 28987 28987 273897 273897 273897 273897	293126 0439M2: 556115 03f11.; 5177 [ 063C12 2010G0: 11008A( 271896	02F12 8e09.y -R-C1-J 31030F0 1150953 124297 2022D11 2022D11 105A021 105A021	08033D0 08033D0 08023D0 08020876 06006:) 06006:) 03252	-ND-16 037D03 037D03 7h01.x 25 MAR 162647 150455
						At
0 0 0 0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			0 0 000	00 00 0	1000 00 000 00000	
	500500	, o o o o o o o o		44444444444444444444444444444444444444	. 4	0 0 44444 44444
. C B B O C L U U L W	55555555555555555555555555555555555555	1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	470 4771 4772 4773 4774 4775 4777 4877 4877	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	4444
15 15 15 15 15	000 01 01 01 01 15 05 15 15	1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	, , , , , , , , , , , , , , , , , , ,	156555555555555555555555555555555555555		4444 4444 15 4446 15 446 15
15 28 15 28 15 28 15 28 15 28 15 28 15 28 28.	000 15 28 01 15 28 02 15 28 03 15 28 04 15 28 05 15 28	15 28 15 28 15 28 15 28 15 28 15 28 28 28	15 28 15 28 15 28 15 28 15 28 15 28 15 28 15 28 28 28	15 28 15 28 15 28 15 28 15 28 15 28 15 28 15 28 15 28 15 28 28 28		4443 15 28. 4444 15 28. 4446 15 28. 4446 15 28. 447 15 28.
15 28.8 6 6 15 28.8 6 6 15 28.8 6 6 15 28.8 6 6 15 28.8 6 6 15 28.8 6 6 15 28.8 6 6 15 28.8 6 6 6	15 28.8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	15 28.8 1 1 1 2 2 8 8 8 1 1 1 1 1 1 1 1 1 1 1	15 28.8 15 28.8 15 28.8 15 28.8 15 28.8 15 28.8 16 28.8 16 28.8	15 28.8 15 28.8 15 28.8 15 28.8 15 28.8 15 28.8 15 28.8 15 28.8 16 28.8 17 28.8 18 28.8 18 28.8 18 28.8 18 28.8	15 228 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	15 28.8 444 15 28.8 445 15 28.8 446 15 28.8 447 15 28.8
15 28.8 604 13 15 28.8 604 13 15 28.8 605 14 15 28.8 605 14 15 28.8 605 29 15 28.8 605 29 15 28.8 607 14 15 28.8 607 14	000 15 28.8 601 12 001 15 28.8 601 12 002 15 28.8 602 13 03 15 28.8 602 13 03 15 28.8 603 9 04 15 28.8 603 9 05 15 28.8 603 10	15 28.8 596 28 15 28.8 596 28 15 28.8 600 10 15 28.8 600 12 15 28.8 600 12 15 28.8 600 12 15 28.8 600 12 16 28.8 600 12	15 28.8 587 9 15 28.8 587 11 15 28.8 587 11 15 28.8 588 12 15 28.8 590 9 15 28.8 592 10 15 28.8 592 10 15 28.8 592 10 15 28.8 592 10 15 28.8 593 19	15 28.8 573 13 15 28.8 574 12 15 28.8 574 12 15 28.8 574 12 15 28.8 575 12 15 28.8 575 12 15 28.8 575 12 15 28.8 579 10 15 28.8 580 9 15 28.8 582 12 15 28.8 586 12	15 28.8 557 9 15 28.8 557 9 15 28.8 557 10 15 28.8 558 9 15 28.8 558 13 15 28.8 558 13 15 28.8 561 28 15 28.8 565 12 15 28.8 565 12 15 28.8 565 12 15 28.8 565 12 15 28.8 565 12 15 28.8 565 12 15 28.8 565 12 15 28.8 567 13 15 28.8 567 13 15 28.8 567 13 15 28.8 567 13 15 28.8 573 13 15 28.8 573 13	443 15 28.8 551 19 444 15 28.8 551 12 445 15 28.8 551 29 446 15 28.8 552 14 447 15 28.8 552 14 447 15 28.8 553 10
15 28.8 604 12 BM66 15 28.8 604 13 BX2 15 28.8 604 28 AQ8 15 28.8 605 14 CB66 15 28.8 605 14 CB66 15 28.8 605 29 BZ34 15 28.8 607 14 CB44 15 28.8 607 14 CB44 15 28.8 608 13 BU66	000 15 28.8 601 12 BJ2: 01 15 28.8 601 12 BJ2: 02 15 28.8 601 12 BJ2: 03 15 28.8 602 13 BU0: 04 15 28.8 603 9 AJ27: 05 15 28.8 603 14 CBR: 06 15 28.8 603 14 CBR:	15 28.8 596 28 AQ3 15 28.8 597 28 AZ4 15 28.8 600 10 AW9 15 28.8 600 12 BG8 15 28.8 600 12 BJ1 15 28.8 600 12 BM4 15 28.8 600 12 BM4 16 28.8 600 12 BM4	15 28.8 587 9 AIS3. 15 28.8 587 10 BE9. 15 28.8 587 11 AY1. 15 28.8 588 12 BJ3. 15 28.8 590 9 AW45. 15 28.8 592 10 BE5. 15 28.8 592 10 BU3. 15 28.8 592 10 BJ3. 15 28.8 592 10 BJ3. 15 28.8 592 10 BJ3. 15 28.8 593 17 BJ3.	15 28.8 573 13 8Q9 15 28.8 574 10 BE3 15 28.8 574 12 BH6; 15 28.8 574 12 BM7; 15 28.8 575 12 BM6; 15 28.8 575 12 BM6; 15 28.8 579 10 BG5; 15 28.8 580 9 AIG6; 15 28.8 582 12 BI6; 15 28.8 582 12 BJ6; 15 28.8 582 12 BJ6; 16 28.8 586 12 BJ1; 17 28.8 586 12 BJ1; 18 28.8 586 12 BJ1;	15 28.8 557 9 AN35; 15 28.8 557 10 BES 15 28.8 557 110 BES 15 28.8 557 12 BII 15 28.8 558 9 AI69; 15 28.8 558 10 BES 15 28.8 558 13 BUO 15 28.8 558 14 CD3 15 28.8 561 28 BH7; 15 28.8 565 12 BI4; 15 28.8 565 12 BJ2; 15 28.8 565 12 BJ2; 15 28.8 566 14 R90; 15 28.8 567 13 BUJ1 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 12 BIS	443 15 28.8 551 12 BM2 444 15 28.8 551 12 BM2 445 15 28.8 551 29 AG2 446 15 28.8 552 14 CA7 447 15 28.8 554 14 CA6 447 15 28.8 554 14 CA6
15 28.8 604 12 BM66 15 28.8 604 13 BX2 15 28.8 604 28 AQ8 15 28.8 605 14 CB66 15 28.8 605 14 CB66 15 28.8 605 29 BZ34 15 28.8 607 14 CB44 15 28.8 607 14 CB44 15 28.8 607 14 CB44	000 15 28.8 601 12 BJ2: 01 15 28.8 601 12 BJ2: 02 15 28.8 601 12 BJ2: 03 15 28.8 602 13 BU0: 04 15 28.8 603 9 AJ27: 05 15 28.8 603 14 CBR: 06 15 28.8 603 14 CBR:	15 28.8 596 28 AQ3 15 28.8 597 28 AZ4 15 28.8 600 10 AW9 15 28.8 600 12 BG8 15 28.8 600 12 BJ1 15 28.8 600 12 BM4 15 28.8 600 12 BM4 16 28.8 600 12 BM4	15 28.8 587 9 AIS3. 15 28.8 587 10 BE9. 15 28.8 587 11 AY1. 15 28.8 588 12 BJ3. 15 28.8 590 9 AW45. 15 28.8 592 10 BE5. 15 28.8 592 10 BU3. 15 28.8 592 10 BJ3. 15 28.8 592 10 BJ3. 15 28.8 592 10 BJ3. 15 28.8 593 17 BJ3.	15 28.8 573 13 8Q9 15 28.8 574 10 BE3 15 28.8 574 12 BH6; 15 28.8 574 12 BM7; 15 28.8 575 12 BM6; 15 28.8 575 12 BM6; 15 28.8 579 10 BG5; 15 28.8 580 9 AIG6; 15 28.8 582 12 BI6; 15 28.8 582 12 BJ6; 15 28.8 582 12 BJ6; 16 28.8 586 12 BJ1; 17 28.8 586 12 BJ1; 18 28.8 586 12 BJ1;	15 28.8 557 9 A166 15 28.8 557 10 BES 15 28.8 557 12 BIS 15 28.8 557 12 BIS 15 28.8 558 10 BES 15 28.8 558 10 BES 15 28.8 558 11 BES 15 28.8 558 13 BUO 15 28.8 558 14 CD3 15 28.8 565 12 BI4 15 28.8 565 12 BI4 15 28.8 566 14 R90 15 28.8 566 14 R90 15 28.8 567 13 BUO 15 28.8 567 13 BUO 15 28.8 570 10 BES 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 12 BIS	443 15 28.8 551 12 BM2 444 15 28.8 551 12 BM2 445 15 28.8 551 29 AG2 446 15 28.8 552 14 CA7 447 15 28.8 554 14 CA6 447 15 28.8 554 14 CA6
15 28.8 604 12 BM66 15 28.8 604 13 BX2 15 28.8 604 28 AQ8 15 28.8 605 14 CB66 15 28.8 605 14 CB66 15 28.8 605 29 BZ34 15 28.8 607 14 CB44 15 28.8 607 14 CB44 15 28.8 607 14 CB44	000 15 28.8 601 12 BJ2: 01 15 28.8 601 12 BJ2: 02 15 28.8 601 12 BJ2: 03 15 28.8 602 13 BU0: 04 15 28.8 603 9 AJ27: 05 15 28.8 603 14 CBR: 06 15 28.8 603 14 CBR:	15 28.8 596 28 AQ3 15 28.8 597 28 AZ4 15 28.8 600 10 AW9 15 28.8 600 12 BG8 15 28.8 600 12 BJ1 15 28.8 600 12 BM4 15 28.8 600 12 BM4 16 28.8 600 12 BM4	15 28.8 587 9 AIS3. 15 28.8 587 10 BE9. 15 28.8 587 11 AY1. 15 28.8 588 12 BJ3. 15 28.8 590 9 AW45. 15 28.8 592 10 BE5. 15 28.8 592 10 BU3. 15 28.8 592 10 BJ3. 15 28.8 592 10 BJ3. 15 28.8 592 10 BJ3. 15 28.8 593 17 BJ3.	15 28.8 573 13 8Q9 15 28.8 574 10 BE3 15 28.8 574 12 BH6; 15 28.8 574 12 BM7; 15 28.8 575 12 BM6; 15 28.8 575 12 BM6; 15 28.8 579 10 BG5; 15 28.8 580 9 AIG6; 15 28.8 582 12 BI6; 15 28.8 582 12 BJ6; 15 28.8 582 12 BJ6; 16 28.8 586 12 BJ1; 17 28.8 586 12 BJ1; 18 28.8 586 12 BJ1;	15 28.8 557 9 AN35; 15 28.8 557 10 BES 15 28.8 557 110 BES 15 28.8 557 12 BII 15 28.8 558 9 AI69; 15 28.8 558 10 BES 15 28.8 558 13 BUO 15 28.8 558 14 CD3 15 28.8 561 28 BH7; 15 28.8 565 12 BI4; 15 28.8 565 12 BJ2; 15 28.8 565 12 BJ2; 15 28.8 566 14 R90; 15 28.8 567 13 BUJ1 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 12 BIS	443 15 28.8 551 12 BMS: 444 15 28.8 551 12 BMS: 445 15 28.8 551 29 AG2 446 15 28.8 552 14 CA7 447 15 28.8 554 14 CA6 447 15 28.8 554 14 CA6
15 28.8 604 12 BM603493 15 28.8 604 13 BX275967 15 28.8 604 13 BX275967 15 28.8 605 14 CB279297 15 28.8 605 14 CB682706 15 28.8 605 29 BZ363275 15 28.8 605 9 AV825339 15 28.8 607 14 CB452514 15 28.8 607 14 CB452514 15 28.8 607 14 CB452514	00 15 28.8 601 12 BJ295991 01 15 28.8 601 12 BJ299995 02 15 28.8 601 28 BJ299995 03 15 28.8 602 13 BJ050747 04 15 28.8 603 9 AJ273037 05 15 28.8 603 9 AJ273037 05 15 28.8 603 14 CB825076	15 28.8 595 10 BG925187 15 28.8 596 28 AQ333696 15 28.8 597 28 AZ332687 15 28.8 600 10 AM963089 15 28.8 600 12 BG903759 15 28.8 600 12 BJ987526 15 28.8 600 12 BJ185090 15 28.8 600 12 BJ185090 16 28 8 600 12 BM887480	15 28.8 587 9 AIS34884 15 28.8 587 10 BE99814 15 28.8 587 11 AY106569 15 28.8 588 12 BJ316065 15 28.8 590 9 AW453151 15 28.8 592 10 BE513360 15 28.8 592 12 BJ293896 15 28.8 592 12 BJ293896 15 28.8 594 9 AV983043 15 28.8 595 9 AI725999 16 28.8 595 10 BC525197	15 28.8 573 13 BQ908229 15 28.8 574 10 BE396864 15 28.8 574 12 BH2968692 15 28.8 574 12 BH799120 15 28.8 575 12 BH654181 15 28.8 575 12 BH654181 15 28.8 579 10 BG524336 15 28.8 580 9 AI665937 15 28.8 580 9 AI667915 15 28.8 582 12 BI667915 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ157111 15 28.8 586 12 BJ193522	15 28.8 55.7 9 ANGS2609 15 28.8 55.7 9 ANGS2609 15 28.8 55.7 10 BE598423 15 28.8 55.7 10 BE598423 15 28.8 55.7 12 BIIT/2001 15 28.8 55.8 9 AIG62103 15 28.8 55.8 10 BE397043 15 28.8 55.8 13 BU062006 15 28.8 55.8 14 CD563377 15 28.8 56.1 28 BH775964 15 28.8 56.1 28 BH775964 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BM175399 15 28.8 56.6 12 BM175399 15 28.8 56.6 12 BM175399 15 28.8 56.7 13 BM748556 15 28.8 570 12 BM4247583 15 28.8 570 12 BM4247583 15 28.8 573 10 BE872294 16 28.8 573 10 BE872294 17 28 28 573 10 BE87264611	443 15 28.8 551 9 A1534769 444 15 28.8 551 12 BM259202 445 15 28.8 551 29 AG218247 446 15 28.8 552 14 CA704626 447 15 28.8 552 14 CA704626 448 15 28.8 554 14 CA698820
15 28.8 604 12 BM603493 15 28.8 604 13 BX275967 15 28.8 604 13 BX275967 15 28.8 605 14 CB279297 15 28.8 605 14 CB682706 15 28.8 605 29 BZ363275 15 28.8 605 9 AV825339 15 28.8 607 14 CB452514 15 28.8 607 14 CB452514 15 28.8 607 14 CB452514	00 15 28.8 601 12 BJ295991 01 15 28.8 601 12 BJ299995 02 15 28.8 601 28 BJ299995 03 15 28.8 602 13 BJ050747 04 15 28.8 603 9 AJ273037 05 15 28.8 603 9 AJ273037 05 15 28.8 603 14 CB825076	15 28.8 595 10 BG925187 15 28.8 596 28 AQ333696 15 28.8 597 28 AZ332687 15 28.8 600 10 AM963089 15 28.8 600 12 BG903759 15 28.8 600 12 BJ987526 15 28.8 600 12 BJ185090 15 28.8 600 12 BJ185090 16 28 8 600 12 BM887480	15 28.8 587 9 AIS34884 15 28.8 587 10 BE99814 15 28.8 587 11 AY106569 15 28.8 588 12 BJ316065 15 28.8 590 9 AW453151 15 28.8 592 10 BE513360 15 28.8 592 12 BJ293896 15 28.8 592 12 BJ293896 15 28.8 594 9 AV983043 15 28.8 595 9 AI725999 16 28.8 595 10 BC525197	15 28.8 573 13 BQ908229 15 28.8 574 10 BE396864 15 28.8 574 12 BH2968692 15 28.8 574 12 BH799120 15 28.8 575 12 BH654181 15 28.8 575 12 BH654181 15 28.8 579 10 BG524336 15 28.8 580 9 AI665937 15 28.8 580 9 AI667915 15 28.8 582 12 BI667915 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ157111 15 28.8 586 12 BJ193522	15 28.8 55.7 9 ANGS2609 15 28.8 55.7 9 ANGS2609 15 28.8 55.7 10 BE598423 15 28.8 55.7 10 BE598423 15 28.8 55.7 12 BIIT/2001 15 28.8 55.8 9 AIG62103 15 28.8 55.8 10 BE397043 15 28.8 55.8 13 BU062006 15 28.8 55.8 14 CD563377 15 28.8 56.1 28 BH775964 15 28.8 56.1 28 BH775964 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BM175399 15 28.8 56.6 12 BM175399 15 28.8 56.6 12 BM175399 15 28.8 56.7 13 BM748556 15 28.8 570 12 BM4247583 15 28.8 570 12 BM4247583 15 28.8 573 10 BE872294 16 28.8 573 10 BE872294 17 28 28 573 10 BE87264611	443 15 28.8 551 9 A1534769 444 15 28.8 551 12 BM259202 445 15 28.8 551 29 AG218247 446 15 28.8 552 14 CA704626 447 15 28.8 552 14 CA704626 448 15 28.8 554 14 CA698820
15 28.8 604 12 BM603493 15 28.8 604 13 BX275967 15 28.8 604 28 AQ84844 15 28.8 605 14 CB279297 15 28.8 605 14 CB682706 15 28.8 605 29 BZ363275 15 28.8 605 29 BZ363275 15 28.8 607 14 CB452514 15 28.8 607 14 CB452514	00 15 28.8 601 12 BJ295991 01 15 28.8 601 12 BJ299995 02 15 28.8 601 28 BJ299995 03 15 28.8 602 13 BJ050747 04 15 28.8 603 9 AJ273037 05 15 28.8 603 9 AJ273037 05 15 28.8 603 14 CB825076	15 28.8 595 10 BG925187 15 28.8 596 28 AQ333696 15 28.8 597 28 AZ332687 15 28.8 600 10 AM963089 15 28.8 600 12 BG903759 15 28.8 600 12 BJ987526 15 28.8 600 12 BJ185090 15 28.8 600 12 BJ185090 16 28 8 600 12 BM887480	15 28.8 587 9 AIS34884 15 28.8 587 10 BE99814 15 28.8 587 11 AY106569 15 28.8 588 12 BJ316065 15 28.8 590 9 AW453151 15 28.8 592 10 BE513360 15 28.8 592 12 BJ293896 15 28.8 592 12 BJ293896 15 28.8 594 9 AV983043 15 28.8 595 9 AI725999 16 28.8 595 10 BC525197	15 28.8 573 13 BQ908229 15 28.8 574 10 BE396864 15 28.8 574 12 BH2968692 15 28.8 574 12 BH799120 15 28.8 575 12 BH654181 15 28.8 575 12 BH654181 15 28.8 579 10 BG524336 15 28.8 580 9 AI665937 15 28.8 580 9 AI667915 15 28.8 582 12 BI667915 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ157111 15 28.8 586 12 BJ193522	15 28.8 55.7 9 ANGS2609 15 28.8 55.7 9 ANGS2609 15 28.8 55.7 10 BE598423 15 28.8 55.7 10 BE598423 15 28.8 55.7 12 BIIT/2001 15 28.8 55.8 9 AIG62103 15 28.8 55.8 10 BE397043 15 28.8 55.8 13 BU062006 15 28.8 55.8 14 CD563377 15 28.8 56.1 28 BH775964 15 28.8 56.1 28 BH775964 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BH299513 15 28.8 56.6 12 BM175399 15 28.8 56.6 12 BM175399 15 28.8 56.6 12 BM175399 15 28.8 56.7 13 BM748556 15 28.8 570 12 BM4247583 15 28.8 570 12 BM4247583 15 28.8 573 10 BE872294 16 28.8 573 10 BE872294 17 28 28 573 10 BE87264611	443 15 28.8 551 9 AI534769 444 15 28.8 551 12 BM259202 445 15 28.8 551 29 AG218247 446 15 28.8 552 14 CA704626 447 15 28.8 552 14 CA704626
15 28.8 604 12 BM603493 15 28.8 604 13 BX275967 15 28.8 604 28 AQ84844 15 28.8 605 14 CB279297 15 28.8 605 14 CB682706 15 28.8 605 29 BZ363275 15 28.8 605 29 BZ363275 15 28.8 607 14 CB452514 15 28.8 607 14 CB452514	00 15 28.8 601 12 BJ295991 01 15 28.8 601 12 BJ299995 02 15 28.8 601 28 BJ299995 03 15 28.8 602 13 BJ050747 04 15 28.8 603 9 AJ273037 05 15 28.8 603 9 AJ273037 05 15 28.8 603 14 CB825076	15 28.8 595 10 BG925187 15 28.8 596 28 AQ333696 15 28.8 597 28 AZ332687 15 28.8 600 10 AM963089 15 28.8 600 12 BG903759 15 28.8 600 12 BJ987526 15 28.8 600 12 BJ185090 15 28.8 600 12 BJ185090 16 28 8 600 12 BM887480	15 28.8 587 9 AIS34884 15 28.8 587 10 BE99814 15 28.8 587 11 AY106569 15 28.8 588 12 BJ316065 15 28.8 590 9 AW453151 15 28.8 592 10 BE513360 15 28.8 592 12 BJ293896 15 28.8 592 12 BJ293896 15 28.8 594 9 AV983043 15 28.8 595 9 AI725999 16 28.8 595 10 BC525197	15 28.8 573 13 BQ908229 15 28.8 574 10 BE396864 15 28.8 574 12 BH2968692 15 28.8 574 12 BH799120 15 28.8 575 12 BH654181 15 28.8 575 12 BH654181 15 28.8 579 10 BG524336 15 28.8 580 9 AI665937 15 28.8 580 9 AI667915 15 28.8 582 12 BI667915 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ167911 15 28.8 582 12 BJ157111 15 28.8 586 12 BJ193522	15 28.8 557 9 AN35; 15 28.8 557 10 BES 15 28.8 557 110 BES 15 28.8 557 12 BII 15 28.8 558 9 AI69; 15 28.8 558 10 BES 15 28.8 558 13 BUO 15 28.8 558 14 CD3 15 28.8 561 28 BH7; 15 28.8 565 12 BI4; 15 28.8 565 12 BJ2; 15 28.8 565 12 BJ2; 15 28.8 566 14 R90; 15 28.8 567 13 BUJ1 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 10 BES 15 28.8 573 12 BIS	443 15 28.8 551 9 AI534769 444 15 28.8 551 12 BM259202 445 15 28.8 551 29 AG218247 446 15 28.8 552 14 CA704626 447 15 28.8 552 14 CA704626

*!* 

<b>88888</b>	C 582 C 583	587	57	177	77.	366	9 0 0	9	566	5 5 5	n Grid	<b>ภ</b> பா பா	ហេស	பாபாப	44	v v v	ហហ	44	5 55 6	ភព ភព	າພພ	ww	C 530	2 2 2 1 2 2 2 1	3 10 6	3 N K	o	c 519	
15	15	15	15	155	15	1 1 1 5 5 5 5	15	15	15 15	15	15	3 15 15	15	155	15	15	15	15	155	155	15	15	15	155	15	155	15	15	15
	22 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8				P 60 5						2000	× × ×		œ œ o		œ œ œ			000	ဘောတ	• 🌣 🜣		80 80		000				
7776	667 667 667	000	. 6 6 6	900	מפת	שמע	i UT UT	S	<b>UT UT I</b>	<b>ரை ப</b>	<b>ภ ரா</b> டி	4 ru n	44	44	44	444	A W	<b> (</b> ) (.		אנטנ	JAMA	NN	NNI	ACAC	3 K) A	<b>س بـ د</b>			00
10 w w 10	12 12 13	- W	, 42 45 (			~ 6 8	·ωω	0 0	00.	104	oωι	200	40	00,	, ο ω	000	N	89	0	$\sim \sim \sim$	$\omega$	$\sim \omega$	000	$\circ \circ \circ$	SNO	2 PP (P	,	· ·	-4-
BM425910 BU061912 BW275510 BG779584	AU128057 BI254917 BJ575521 BU061913	BQ407491 BZ404891 CD212192	CA680547 CD226688	BZ351810 BU340377	CB853868	BH816398 CC107164 BO407422	BU059936 BU646993	BZ566247 BG719975	BF648396 BF676981	BI460891 CB378796	BQ606473	BI828208 BG521416 BII380081	CD528250 BI529212	BF685440 BE867889	BW233122 BG327273	BF866563 BE296757 BE596906	BM301007 AW584471	BZ544058 BH601368	BG385640	BU397278	BQ169269 CA755709	BQ295733 BI391033	BF483216 BE295626	BU883131	BJ235151	CA619058	BE270496 BU338694	AL819053	CB458133 AV974119
BM425910 pgf2n-pk0 BU061912 Fgr 1 B15 BW275510 BW275510 BG779584 602668323	AU128057 AU1 BI254917 60 BJ575521 BJ BU061913 Fg	8Q407491 GA 8Z404891 OG CD212192 HS	BB622268 BB CA680547 wll CD226688 CC	BZ351810 hw BZ351817 60	CB853868 UI	BH81639 CC10716	BU05993 BU64699	BZ56624 BG71997	BF64839	BI46085	BQ60647	BI82820 BG52141	CD52825 BI52921	BE86788	BW23312 BG32727		BM30100 AW584471	8754405 B754405 B760136	BG38564	BU39727	BQ16926 CA75570	BQ29573 BI39103	BF483216 WHE178 BE295626 601176	BU883131 UM86TF1	BJ235151 BJ235151	80632191 UI-H-F CA619058 wlln.p	BE270496 60118546 BU338694 60351540	82404096 C AU082980 AU AL819053 AI	CB458133 716270 AV974119 AV974119
				•							,																		
c 658 659 c 660		c 651 653	C 648 C 649 650				C 639	63B		C 633		c 628 629			c 621			614		610	c 607	σ σ	c 603	000	0 0 0 0 0 0 0 0 0 0 0 0 0	່ເທເທ	99	ហហហ	99
	654 655 1 656 1	651 1 652 1 653 1	648 649 1	646	644	641	640		635	633	631	628	626	624	622	619	616	614	612		607	606	603	601	5998	596	594 595	592 593	589 590
658 659 1 660 1	654 15 28. 655 15 28. 656 15 28. 657 15 28.	651 15 28. 652 15 28. 653 15 28.	648 15 28. 649 15 28. 650 15 28.	646 15 28. 646 15 28. 647 15 28.	644 15 28.	641 15 28. 642 15 28.	639 15 28 640 15 28	15 28.	635 15 28.	633 15 28.	631 15 28.	628 15 28. 629 15 28.	626 15 28 627 15 28	623 15 28 624 15 28	621 15 28 622 15 28	618 15 28. 619 15 28.	616 15 28 617 15 28	614 15 28	612 15 28	15 28. 28.	607 15 28 608 15 28	605 15 28 606 15 28	603 15 28	600 15 28.	599 15 28	596 15 28 597 15 28	594 15 28 595 15 28	591 15 28 592 15 28 593 15 28	589 15 28. 590 15 28.
658 15 28. 659 15 28. 660 15 28. 661 15 28.	654 15 28.8 655 15 28.8 656 15 28.8	651 15 28.8 652 15 28.8 653 15 28.8	648 15 28.8 649 15 28.8 650 15 28.8	646 15 28.8 646 15 28.8 647 15 28.8	644 15 28.8 644 15 28.8	641 15 28.8 642 15 28.8	639 15 28.8 640 15 28.8	15 28.8 15 28.8	635 15 28.8 636 15 28.8	632 15 28.8 633 15 28.8	631 15 28.8	628 15 28.8 629 15 28.8	626 15 28.8 627 15 28.8	623 15 28.8 624 15 28.8	621 15 28.8 622 15 28.8	618 15 28.8 619 15 28.8	616 15 28.8 617 15 28.8	614 15 28.8 614 15 28.8	612 15 28.8	15 28.8 15 28.8	607 15 28.8 608 15 28.8	605 15 28.8 606 15 28.8	603 15 28.8 604 15 28.8	600 15 28.8 601 15 28.8	599 15 28.8	596 15 28.8 597 15 28.8	594 15 28.8 595 15 28.8	591 15 28.8 592 15 28.8 593 15 28.8	589 15 28.8 590 15 28.8
658 15 28.8 751 29 659 15 28.8 753 9 660 15 28.8 753 28 661 15 28.8 754 10	654 15 28.8 746 12 655 15 28.8 747 12 656 15 28.8 748 13 657 15 28.8 750 9	651 15 28.8 739 14 652 15 28.8 740 12 653 15 28.8 744 13	648 15 28.8 736 28 649 15 28.8 737 13 650 15 28.8 738 29	645 15 28.8 734 12 646 15 28.8 735 10 647 15 28.8 736 9	644 15 28.8 730 29 644 15 28.8 733 29	641 15 28.8 728 29 642 15 28.8 730 29	639 15 28.8 728 10 640 15 28.8 728 29	15 28.8 727 29 15 28.8 728 10	634 15 28.8 724 29 635 15 28.8 726 13 636 15 28.8 727 10	632 15 28.8 722 13 633 15 28.8 724 13	630 15 28.8 720 10 631 15 28.8 720 29	628 15 28.8 715 10 629 15 28.8 716 13	626 15 28.8 713 13 627 15 28.8 714 10	623 15 28.8 711 29 624 15 28.8 712 10	621 15 28.8 704 12 622 15 28.8 710 13	618 15 28.8 700 10 619 15 28.8 701 10	616 15 28.8 698 12 617 15 28.8 699 13	614 15 28.8 696 10 614 15 28.8 696 10	612 15 28.8 695 29	15 28.8 694 13 15 28.8 694 28	607 15 28.8 692 10 608 15 28.8 693 10	605 15 28.8 690 10 606 15 28.8 690 13	602 15 28.8 688 29 603 15 28.8 688 29 604 15 28.8 689 12	600 15 28.8 681 14 601 15 28.8 682 13	598 15 28.8 6/8 12	596 15 28.8 677 10 597 15 28.8 678 9	594 15 28.8 675 10 595 15 28.8 676 9	591 15 28.8 673 13 592 15 28.8 673 29 593 15 28.8 674 29	589 15 28.8 672 12 590 15 28.8 673 2
658 15 28.8 751 659 15 28.8 753 660 15 28.8 753 661 15 28.8 753	654 15 28.8 746 12 655 15 28.8 747 12 656 15 28.8 748 13 657 15 28.8 750 9	651 15 28.8 739 14 652 15 28.8 740 12 653 15 28.8 744 13	648 15 28.8 736 28 649 15 28.8 737 13 650 15 28.8 738 29	645 15 28.8 734 12 646 15 28.8 735 10 647 15 28.8 736 9	644 15 28.8 730 29 644 15 28.8 733 29	641 15 28.8 728 29 642 15 28.8 730 29	639 15 28.8 728 10 640 15 28.8 728 29	15 28.8 727 29 15 28.8 728 10	634 15 28.8 724 29 635 15 28.8 726 13 636 15 28.8 727 10	632 15 28.8 722 13 633 15 28.8 724 13	630 15 28.8 720 10 631 15 28.8 720 29	628 15 28.8 715 10 629 15 28.8 716 13	626 15 28.8 713 13 627 15 28.8 714 10	623 15 28.8 711 29 624 15 28.8 712 10	621 15 28.8 704 12 622 15 28.8 710 13	618 15 28.8 700 10 619 15 28.8 701 10	616 15 28.8 698 12 617 15 28.8 699 13	614 15 28.8 696 10 614 15 28.8 696 10	612 15 28.8 695 29	15 28.8 694 13 15 28.8 694 28	607 15 28.8 692 10 608 15 28.8 693 10	605 15 28.8 690 10 606 15 28.8 690 13	602 15 28.8 688 29 603 15 28.8 688 29 604 15 28.8 689 12	600 15 28.8 681 14 601 15 28.8 682 13	598 15 28.8 6/8 12	596 15 28.8 677 10 597 15 28.8 678 9	594 15 28.8 675 10 595 15 28.8 676 9	591 15 28.8 673 13 592 15 28.8 673 29 593 15 28.8 674 29	589 15 28.8 672 12 590 15 28.8 673 2
658 15 28.8 751 29 BZ735588 659 15 28.8 753 9 AU142422 660 15 28.8 753 28 AQ330090 661 15 28.8 754 10 BG438057	654 15 28.8 746 12 BI559838 655 15 28.8 747 12 BM051889 656 15 28.8 748 13 BM051870 657 15 28.8 750 9 AT534941	651 15 28.8 739 14 CB989245 652 15 28.8 740 12 BM011746 653 15 28.8 744 13 BM468727	648 15 28.8 736 28 BH399225 649 15 28.8 737 13 BA5601 650 15 28.8 738 29 BZ735667	645 15 28.8 734 12 BI116859 646 15 28.8 735 10 BG758517 647 15 28.8 736 9 AJ558966	643 15 28.8 730 29 CNS04SXM 644 15 28.8 733 29 BZ739448	641 15 28.8 728 29 BZ681486 642 15 28.8 730 29 BZ643745	639 15 28.8 728 10 BF304732 640 15 28.8 728 29 BZ457717	15 28.8 727 29 BZ827095 15 28.8 728 10 BE224708	634 15 28.8 724 29 CC338221 635 15 28.8 726 13 BU112900 636 15 28.8 727 10 BC476400	632 15 28.8 722 13 BW240142 633 15 28.8 724 13 BU389597	630 15 28.8 720 10 BG470096 631 15 28.8 720 29 CNS01ETH	628 15 28.8 715 10 BG523071 629 15 28.8 716 13 BU361615	626 15 28.8 713 13 B0999753 627 15 28.8 714 10 BE270110	623 15 28.8 711 29 82639904 624 15 28.8 712 10 88655750 625 15 28.8 712 13 81062507	621 15 28.8 704 12 B1483467 622 15 28.8 710 13 BU273877	618 15 28.8 700 10 BG463806 619 15 28.8 701 10 BG701097	616 15 28.8 698 12 BC914072	614 15 28.8 696 10 BG081797 614 15 28.8 696 10 BG686954 615 15 28.8 608 10 BE682225	612 15 28.8 695 29 CNS06DM6	15 28.8 694 13 BU371405 15 28.8 694 28 BH656620	607 15 28.8 692 10 BG120794 608 15 28.8 693 10 BG068783	605 15 28.8 690 10 BG522673 606 15 28.8 690 13 BQ806072	604 15 28.8 688 29 BZ328233 604 15 28.8 689 12 BT754206	600 15 28.8 681 14 BY719362 601 15 28.8 682 13 BU065783	599 15 28.8 680 12 B1/33994 599 15 28.8 680 12 B1954394	596 15 28.8 677 10 BE386173 597 15 28.8 678 9 AW564626	594 15 28.8 675 10 BG705103 595 15 28.8 676 9 AI294378	591 15 28.8 673 13 BW046590 592 15 28.8 673 29 BZ308155 593 15 28.8 674 29 BX132713	589 15 28.8 672 12 BM596911 590 15 28.8 673 2 HSM070316
658 15 28.8 751 29 BZ735588 659 15 28.8 753 9 AU142422 660 15 28.8 753 28 AQ330090 661 15 28.8 754 10 BG438057	654 15 28.8 746 12 BI559838 655 15 28.8 747 12 BM051889 656 15 28.8 748 13 BM051870 657 15 28.8 750 9 AT534941	651 15 28.8 739 14 CB989245 652 15 28.8 740 12 BM011746 653 15 28.8 744 13 BM468727	648 15 28.8 736 28 BH399225 649 15 28.8 737 13 BA5601 650 15 28.8 738 29 BZ735667	645 15 28.8 734 12 BI116859 646 15 28.8 735 10 BG758517 647 15 28.8 736 9 AJ558966	643 15 28.8 730 29 CNS04SXM 644 15 28.8 733 29 BZ739448	641 15 28.8 728 29 BZ681486 642 15 28.8 730 29 BZ643745	639 15 28.8 728 10 BF304732 640 15 28.8 728 29 BZ457717	15 28.8 727 29 BZ827095 15 28.8 728 10 BE224708	634 15 28.8 724 29 CC338221 635 15 28.8 726 13 BU112900 636 15 28.8 727 10 BC476400	632 15 28.8 722 13 BW240142 633 15 28.8 724 13 BU389597	630 15 28.8 720 10 BG470096 631 15 28.8 720 29 CNS01ETH	628 15 28.8 715 10 BG523071 629 15 28.8 716 13 BU361615	626 15 28.8 713 13 B0999753 627 15 28.8 714 10 BE270110	623 15 28.8 711 29 82639904 624 15 28.8 712 10 88655750 625 15 28.8 712 13 81062507	621 15 28.8 704 12 B1483467 622 15 28.8 710 13 BU273877	618 15 28.8 700 10 BG463806 619 15 28.8 701 10 BG701097	616 15 28.8 698 12 BC914072	614 15 28.8 696 10 BG081797 614 15 28.8 696 10 BG686954 615 15 28.8 608 10 BE682225	612 15 28.8 695 29 CNS06DM6	15 28.8 694 13 BU371405 15 28.8 694 28 BH656620	607 15 28.8 692 10 BG120794 608 15 28.8 693 10 BG068783	605 15 28.8 690 10 BG522673 606 15 28.8 690 13 BQ806072	604 15 28.8 688 29 BZ328233 604 15 28.8 689 12 BT754206	600 15 28.8 681 14 BY719362 601 15 28.8 682 13 BU065783	599 15 28.8 680 12 B1/33994 599 15 28.8 680 12 B1954394	596 15 28.8 677 10 BE386173 597 15 28.8 678 9 AW564626	594 15 28.8 675 10 BG705103 595 15 28.8 676 9 AI294378	591 15 28.8 673 13 BW046590 592 15 28.8 673 29 BZ308155 593 15 28.8 674 29 BX132713	589 15 28.8 672 12 BM596911 590 15 28.8 673 2 HSM070316
658 15 28.8 751 29 659 15 28.8 753 9 660 15 28.8 753 28 661 15 28.8 754 10	654 15 28.8 746 12 BI559838 655 15 28.8 747 12 BM051889 656 15 28.8 748 13 BM051870 657 15 28.8 750 9 AT534941	651 15 28.8 739 14 CB989245 652 15 28.8 740 12 BM011746 653 15 28.8 744 13 BM468727	648 15 28.8 736 28 BH399225 649 15 28.8 737 13 BA5601 650 15 28.8 738 29 BZ735667	645 15 28.8 734 12 BI116859 646 15 28.8 735 10 BG758517 647 15 28.8 736 9 AJ558966	643 15 28.8 730 29 CNS04SXM 644 15 28.8 733 29 BZ739448	641 15 28.8 728 29 BZ681486 642 15 28.8 730 29 BZ643745	639 15 28.8 728 10 BF304732 640 15 28.8 728 29 BZ457717	15 28.8 727 29 BZ827095 15 28.8 728 10 BE224708	634 15 28.8 724 29 CC338221 635 15 28.8 726 13 BU112900 636 15 28.8 727 10 BC476400	632 15 28.8 722 13 BW240142 633 15 28.8 724 13 BU389597	630 15 28.8 720 10 BG470096 631 15 28.8 720 29 CNS01ETH	628 15 28.8 715 10 BG523071 629 15 28.8 716 13 BU361615	626 15 28.8 713 13 B0999753 627 15 28.8 714 10 BE270110	623 15 28.8 711 29 82639904 624 15 28.8 712 10 88655750 625 15 28.8 712 13 81062507	621 15 28.8 704 12 B1483467 622 15 28.8 710 13 BU273877	618 15 28.8 700 10 BG463806 619 15 28.8 701 10 BG701097	616 15 28.8 698 12 BC914072	614 15 28.8 696 10 BG081797 614 15 28.8 696 10 BG686954 615 15 28.8 608 10 BE682225	612 15 28.8 695 29 CNS06DM6	15 28.8 694 13 BU371405 15 28.8 694 28 BH656620	607 15 28.8 692 10 BG120794 608 15 28.8 693 10 BG068783	605 15 28.8 690 10 BG522673 606 15 28.8 690 13 BQ806072	604 15 28.8 688 29 BZ328233 604 15 28.8 689 12 BT754206	600 15 28.8 681 14 BY719362 601 15 28.8 682 13 BU065783	599 15 28.8 680 12 B1/33994 599 15 28.8 680 12 B1954394	596 15 28.8 677 10 BE386173 597 15 28.8 678 9 AW564626	594 15 28.8 675 10 BG705103 595 15 28.8 676 9 AI294378	591 15 28.8 673 13 BW046590 592 15 28.8 673 29 BZ308155 593 15 28.8 674 29 BX132713	589 15 28.8 672 12 BM596911 590 15 28.8 673 2 HSM070316

A
700 14 COD98277  701 15 COD98277  702 15 COD98277  703 15 COD98277  703 15 COD98277  704 15 COD98277  705 15 COD98277  707 15 COD9827  707 15 COD98277  707 15 COD9827  707 15 COD98277  707 15 COD9827  707 15 COD9827  707 15 COD9827  707 15 COD9827  707 15 COD98
Colonia   Colo
A COMBRAITY A COMB
CODSSILIT AGENOMY AUSSSILIT AGENOMY BURSSILIT AG
2217 AGENCOURT 2217 A
2217 AGENCOURT 23217 AGENCOURT
### AGENCOURT   735   15 28 8 865 29 8 10
735 736 737 738 739 739 739 739 739 739 739 739 739 739
735 15 28.8 865 29 877 10 865 29 877 10 8739 15 28.8 867 13 80 739 15 28.8 867 13 80 744 13 15 28.8 867 13 80 744 13 15 28.8 867 13 80 744 13 15 28.8 869 13 80 744 13 15 28.8 869 13 80 744 14 15 28.8 869 13 80 744 14 15 28.8 869 13 80 744 14 15 28.8 869 13 80 744 14 14 15 28.8 869 14 14 15 28.8 869 15 15 28.8 869 16 16 86 75 16 28.8 869 17 18 80 75 18 18 18 18 18 18 18 18 18 18 18 18 18
735 15 28.8 865 29 877 10 865 29 877 10 8739 15 28.8 867 13 80 739 15 28.8 867 13 80 744 13 15 28.8 867 13 80 744 13 15 28.8 867 13 80 744 13 15 28.8 869 13 80 744 13 15 28.8 869 13 80 744 14 15 28.8 869 13 80 744 14 15 28.8 869 13 80 744 14 15 28.8 869 13 80 744 14 14 15 28.8 869 14 14 15 28.8 869 15 15 28.8 869 16 16 86 75 16 28.8 869 17 18 80 75 18 18 18 18 18 18 18 18 18 18 18 18 18
735 15 28.8 865 29 877 10 865 29 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877 10 877
15 28.8 865 29 875 11 15 28.8 867 29 875 11 15 28.8 867 11 15 28.8 867 11 15 28.8 867 11 15 28.8 867 11 15 28.8 867 11 15 28.8 867 11 15 28.8 867 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 868 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8 869 11 15 28.8
5 28.8 8 865 29 875 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 867 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900 55 113 800 55 28.8 8 900
8.8 8 867 13 888 888 887 13 888 888 888 888 888 888 888 888 888
55 7 3 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
BZ40486 BU46221 BU54231 BU54231 BU66676 BU16676 BU16676 BU16676 BU26476 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU32674 BU3267
<b>はおおおれたのは、これには、これには、これには、これには、これには、これには、これには、これに</b>
BZ40488 BZ40488 BU46222 BU54233 BEE66803 BEE66803 BEI66725 BIG6771 BGG32674 BCG791640 BCG791765 BCG79176 BCG79176 BCG79176 BCG
OGAAKOITC  AGENCOURT 603159290 AGENCOURT 603177483 AGENCOURT 603177483 AGENCOURT 603177483 AGENCOURT GA Ea002 602725617 AGENCOURT GA EACHCOURT GA EACHCOURT GA EACHCOURT GA EACHCOURT GA EACHCOURT GA EACHCOURT 602190102 AGENCOURT AGENCOURT 602190102 AGENCOURT AGENCOURT 602190102 AGENCOURT AGENCOURT 602190103 AGENCOURT 602190103 AGENCOURT 602190103 AGENCOURT 602190103 AGENCOURT 602190103 AGENCOURT 602190103 AGENCOURT 6031725014 6011752188 AGENCOURT 603175216 6011752188 AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT 603175267 AGENCOURT 761736004 AGENCOURT Tetraodon 601511453 60134749

C C C C C C C C C C C C C C C C C C C	608 608 918
15 15 15 15 15 15 15 15 15 15 15 15 15 1	15
22222222222222222222222222222222222222	28.8 8.8
993 993 994 1009 1009 1000 1010 1010 1022 1031 1047 1061 1065 1066 1066 1076 1076 1076 1076 1076 1076	986 985
29 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	29
BUJ04812 AG082404 ALS14952 BZ578215 CX80060FE BQ05060FE BQ05060FE BQ05060FE BQ05060FE BQ05060FE BC05060FE BC05060FE BC05060FE BC05060FE BC0606037 BC276417 AG132263 CC85036362 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC677452 BC6	CNSO6RMU CNSO3Y4A
BUJO4812 BUJO4812 BUJO4812 BOJ73849 AGD82404 Pan trog1 ALS14952 AL514952 BZ578215 msh2 5751 AL410592 T7 end of BQ068056 AGENCOURT BE779062 60146436 BG297512 602395675 BQ6677452 GO295676 AL209996 Tetraodon AGD84516 Pan trog1 BZ56149 Pacc92-164 BQ276417 AGENCOURT BX45376 Pan trog1 CC286362 CTetraodon AGD84516 Pan trog1 BX346317 BX345931 BG121844 GO235964 BX346317 BX346317 BW30680037 AGENCOURT BX35991 BX346317 BW306804 AGENCOURT BF34484 60235064 BC276417 AGENCOURT BF346632 Tetraodon AL555364 AGENCOURT BF34689 AGENCOURT BF34689 AGENCOURT BF30789 AGENCOURT BF30789 AGENCOURT BF30780 AGENCOURT BR30780 AGEN	AL412156 T7 end c AL265843 Tetraodo
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	C 881 C 882
	881 882
99999999999999999999999999999999999999	881 15 28. 882 15 28.
888 888 888 888 888 888 888 888 888 88	881 15 28.8 882 15 28.8
883 15 28.8 116 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816	881 15 28.8 1615 1: 882 15 28.8 1680 10
883 15 28.8 1884 15 28.8 186 885 15 28.8 1816 886 887 15 28.8 1834 888 898 15 28.8 2238 899 15 28.8 2223 899 16 26.9 16.9 897 17 26.9 104 900 17 26.9 104 900 17 26.9 104 900 17 26.9 104 900 17 26.9 104 900 18 26.9 104 900 18 26.9 104 900 18 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 19 14 26.9 104 900 900 900 900 900 900 900 900 900 9	881 15 28.8 1615 1: 882 15 28.8 1680 10
883 15 28.8 116 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816 22.8 1816	881 15 28.8 1615 12 BI519263 882 15 28.8 1680 10 BF308965

იი

იიი

Indels

0

Gaps

0

EST 15-NOV-2001

ი

0 0 0

```
RESULT 1
BF251279
LOCUS
                                              JOURNAL COMMENT
                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                       ACCESSION
                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                            999
999
999
999
                                                                                                                                                                                                                                                                                                                                        988
989
990
991
992
993
                                                                                                                                                                                                                                                                                                                                                                                                 984
986
987
                                                                                                                                                                                                                                                                                                                                                                                                                                        Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
                                                              Coccidioides immitis
Coccidioides immitis
Coccidioides immitis
Eukaryota; Fungi, Ascomycota; Pezizomycotina; Eu
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 395)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis sph
                                             Unpublished Contact: Malcolm J.
                                                                                                                                             BF251279.1 GI:16931422
                                                                                                                                                               BF251279 395 bp mRNA linear EST 15-NOV-20
EST418539 Coccidioides immitis spherule cDNA library Coccidioides
immitis cDNA clone CIAAF11 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                   10
12
                                                                                                                                                                                                                                                                AJ285427

AW862388

BY237153

BH870227

CB346362

BQ345037

CD477528

BG933341
                                                                                                                                                                                                                                                                                                                                                                   AA093779
CD527261
BY191847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AJ284046
AV431283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AW706963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY073743
BH832799
BH833764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A1988678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CB126527
BE497308
BI543121
BH617690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF082559
BU660029
BU585451
CA890022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE506373
CC001754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG383097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BU546528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG658056
                                                                                                                                                                                                                                                                                                                                                                                                 BM745914
                                                                                                                                                                                                                                     ALIGNMENTS
                MD 20850,
                                                                spherule cDNA library
                                                                                                      Eurotiomycetes;
                                                                                                                                                                                                                                                                                                      AV242658 AV242658
BM745914 K-EST0019
AA093779 C10921 Se
CD527261 3529 1 11
BY191847 BY191847
AZ551662 1M0089M18
BJ184962 BJ184962
AJ285427 4A3B-AAJ-
AW862388 RC0-CT038
BY237153 BY237153
BH870227 hM58f06.b
                                                                                                                                                                                                                                                                                                                                                                                                       A1621491 486092A08
BQ163172 952045C01
BY170223 BY170223
BH406412 RPCI-23-4
BG658056 TGESTTya4
BU546528 GM8800088
AJ284046 4A3B-AAI-
AV431283 AV431283
BY073743 BY073743
BH833764 BACPP5-H2
BF082559 QV1-BT063
BU660029 C155a09.z
BF082559 QV1-BT063
BU660029 C155a09.z
BUSBS451 Al am 05G
CA890022 B0T56E1-
CB126527 K-EST0175
BE497308 WHE0766 F
BI543121 949074007
BB6318097 301028 MA
BW706963 SKO8h01.y
BG380097 301028 MA
BW3000380 614014110
BB662181 BB862181
BY680653 BY680653
AV242658 AV242658
                                                                                                                                                                                                                                                              CB346362 CAB2SG000
BQ345037 CM2-NT016
CD477528 eca01-27m
BG933341 WS1_3_F02
                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE506373 db82c08.y
CC001754 PUDHT90TD
BZ628644 ih61d10.b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A1988678 sd06e07.y
                                                                                                                                                                                   EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 2
BF252856
LOCUS
      RESULT 3
BF251334
                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                  JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                            吊
                                                          ş
                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                  Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 52
                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             142
                                            59
                                                                                                                                                                                                                                                                                    Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
                                                                                                                                                                                                                                                                                                                                  Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes; Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 401)

Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                     Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                     BF252856
401 bp mRNA linear EST 15-NOV-20
EST420119 Coccidioides immitis spherule cDNA library Coccidioides
immitis cDNA clone CIABB70 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fax: 301 838 0208
Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                Unpublished Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                   BF252856
BF252856.1 GI:16932999
                                                                                                                                                                                                                                            Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                           Similarity
                                           ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 193
                                                                                                                                                                                                                                                                301 838 3519
301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78
                                                                                  Conservative
                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                 ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /dev_stage="spherule"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
Xho1"
                                                                                                                                           Xho1"
                                                                                                                                                  /clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
                                                                                                                                                                       /dev_stage="spherule"
/lab_host="SOLR"
                                                                                                                                                                                           /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIABB70"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone="CIAAF11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133 с
                                                                                                                                   149 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 52; DB 10; 100.0%; Pred. No. 3.1e-17; tive 0; Mismatches 0;
                                                                                          .0%;
                                                                                  0,
                                                                                          Score 52;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78
                                                                                                                                  89
                                                                                  Mismatches
                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106
                                                                                                                                  38 t
                                                                                           3.1e-17;
                                                                                                                                                                                                                          immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immitis"
                                                                                                   DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    c
                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                    20850,
                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 395;
```

4SD

Indels

0 52 Gaps

0

401;

იი იი იი

O

იიი

იი

```
REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
BF252723
LOCUS
                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137
                                                                                                                                                                                                                                             Coccidioides immitis
Coccidioides immitis
Coccidioides immitis
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Conygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 557)
Gardner, M. J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA library
                                                                                                                           9712 Medical Center Drive, Rockville, Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                             Contact: Malcolm J. Gardner
Department of Eukaryotic Genomics
The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                               BF252723
BF252723.1 GI:16932866
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                  BF252723 557 bp mRNA linear E
EST419986 Coccidioides immitis spherule cDNA library (
immitis cDNA clone CIABA21 5' sequence, mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Malcolm J. Gardner
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes; Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 531)

Gardner, M. J. and Kirkland, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF251334 531 bp mRNA linear EST 15-NOV-200 EST418594 Coccidioides immitis spherule cDNA library Coccidioides immitis cDNA clone CIAAF68 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF251334.1 GI:16931477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF251334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGTTCTCTCACGCTCTCATCGCTCTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                         gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /dev_stage="spherule"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis spherule cDNA library"
/clone_lib="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
Xho1"
/organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIABA21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Coccidioides immitis"
|mml_type="mRRA"
|db_xref="taxon:5501"
|clone="CIAAF68"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 52; DB 10; 100.0%; Pred. No. 3.3e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119 t
                                                       immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immitis
                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ¥
                                                                                                                                                           20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     spherule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 15-NOV-2001
Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                               RESULT 6
BQ499065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 5
BF251103
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                          Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local
                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          161
                                                                                                                                                                                                                                                                                                                   99
Paracoccidioides brasiliensis
Paracoccidioides brasiliensis
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
                                                                                                                                 BQ499065
EST08290 Pb0001
BQ499065
                                                                                                                                                                                                                                                                                                                                      1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Coccidioides immitis
Eukaryota; Fungi; Rocomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 737)
Gardner, M. J. and Kirkland, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 100.0%;
l Similarity 100.0%;
52; Conservative 0
                                                                                   BQ499065.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BF251103
BF251103.1 GI:16931246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF251103 737 bp EST418360 Coccidioides immitis s immitis cDNA clone CIAAC67 5' se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Generation of ESTs from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /dev_stage="spherule"
/lab_host="SOLR"
/lone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
Xho1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="spherule"
/lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIAAC67"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="Vector: pBluescript SK(-);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   271 c
                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            197 с
                                                                                                                                                         311 bp
Paracoccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lib="Coccidioides immitis spherule"
Vector: pBluescript SK(-); Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             168 g
                                                                                                                                                                                                                                                                                                                                                                                                              Score 52; DB Pred. No. 3.5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 52; DB Pred. No. 3.3); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Coccidioides immitis spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp mRNA 14....s spherule cDNA library Council of the control of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            133 €
                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10;
3.5e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.3e-17;
thes 0;
                                                                                                                                                         brasiliensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              library Coccidioides
                                                                                                                                                      CDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA library"
EcoR1; Site_2:
                                                                                                                                                 mRNA sequence.
                                                                                                                                                                                    EST 31-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212
                                                                                                                                                                                                                                                                                                                                                                                                                 Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
BP112708/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Goldman,G.H., Marques,E.R., Ribeiro,D.C.D., Bernarde,R., Travassos,L.R., Nobrega,F.G., Nobrega,M.P., Sav Semighini,C.P. and Goldman,M.H.

The Paracoccidioides brasiliensis EST genome project Eukaryotic Cell, (2002) In press
                                                                                                                                                                                                                                                                                                                                                                    Ishiwata, H., Katsuma, S., Kizaki, K., Patel, O.V., Nakano, H., Takahashi, T., Imai, K., Hirasawa, A., Shiojima, S., Ikawa, H., Y., Tsujimoto, G., Izaike, Y., Todoroki, J. and Hashizume, K. Characterization of gene expression profiles in early bovir pregnancy using a custom cDNA microarray
Mol. Reprod. Dev. 65 (1), 9-18 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP112708 133 pp p
BP112708 ORCS bovine utero-placenta
ORCS13477 5', mRNA sequence.
                                                                                                                                                                                                                                                          Contact: Gozoh Tsujimoto
Department of Molecular, Cell Pharmacology
National Research Institute for Child Health and Development
3-35-31 Taishido, Setagaya, Tokyo 154-8567, Japan
Tel: 81-3-3149-2476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP112708
BP112708.1 GI:28314998
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
23; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Gustavo Henrique Goldman
Laboratory of Molecular Biology
Universidade de Sao Paulo - USP - FCFRP
Av do Cafe S/N, CEP: 14040-903, Ribeirao
                                                                                                                          Email: gtsujimoto@nch.go.jp
This work was performed to collaborate with Developmental Biology
Department, National Institute of Agrobiological Sciences. Address:
2 Ikenodai, Tsukuba, Ibaraki, 305-8602 Japan. Phone & Fax:
81-29-838-8633 e-mail: Kazuha@affrc.go.jp
This work was funded by Organized Research Combination System (ORCS)
project of Ministry of Education, Culture, Sports, Science and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus (cow)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: ggoldman@usp.br
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Onygenales; mitosporic Onygenales; Paracoccidioides.
                                                                                                              Technology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGTTCTCTCACGCTCTCAT 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCAGTTCTCTCACGCTCTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 133)
                                                                                                                                                                                                                                              81-3-3149-1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Paracoccidioides
/mol type="mRNA"
/db_xref="taxon:121759"
/clone lib="Pb0001"
88 c 59 g 91 t
               /organism="Bos taurus"
/mol_type="mRNA"
/db_xref="taxon:9913"
/clone="ORCS13477"
/tissue_type="mixture
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to 311)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.2%; Score 23; DB
100.0%; Pred. No. 0.
Live 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               beiro,D.C.D., Bernardes,L.A., Puccia
.G., Nobrega,M.P., Savoldi-Barbosa,M.
   o
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 13;
 uterus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     brasiliensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 311;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Preto - SP, Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
placenta"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-FEB-2003
1 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
          SOURCE
ORGANISM
                                          ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                          AU166766/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
AU163553
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE CO
                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                            ۰
                                                                                                                                                                                                                                           24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
Contact: Takuji Sasaki
                                                           AU166766.1 GI:12405165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 81-298-38-7441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305-8602,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AU163553.1 GI:11170958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AU163553
                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTTCTCTCACGCTCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81-298-38-7468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                      stage"
                                                                                                                                                                                                                                                                                                                                                        120 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36.5%;
                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49
```

```
187 cécrérécrécrécége 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 CAGTTCTCTCACGCTCTCA 22
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AU163553
AU163553 Rice panicle at flowering stage Oryza sat cultivar-group) cDNA clone E1586, mRNA sequence.
                                                                                     AU166766 ACC callus (2001) Oryza sativa CDNA clone C50247, mRNA seguence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sasaki, T. and Yamamoto, K. Rice cDNA from panicle at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Takuji Sabani
National Institute of Agrobiological Resources
                                                                                                                                                                                                                                               CGCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rhartoideae; Oryzeae; Oryza. (bases 1 to 314)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tsasaki@abr.affrc.go.jp,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Oryza sativa (
/mol type="mRNA"
/culTivar="Nipponbare"
/db_xref="taxon:39947"
/clone="E1586"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /dev_stage="adult"
/clone_lib="ORCS bovine
, 29 g 3
                                                                                                                                                                                                                                                                                                                                                                                                               /dev_stage="flowering stage"
/clone_lib="Rice panicle at
/note="Organ: panicle; Rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cocation/Qualifiers
                                                                                                                                                                                                                                                                                                                36.5%; Score 19; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 19; DB; Pred. No. 5.8
                                                                                                                                                                                                                                                                                                                                                                                  107 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   at flowering stage (2000)
                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             URL:http://rgp
                                                                                                                                                                                                                                                                                                                                                                                   57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                utero-placenta cDNA"
                                                                                                                                                                                                                                                                                                                               BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 12;
5.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (japonica
                                                                                                                                                                                                                                                                                                                                                                                   ~
                                                                                                                                                                                                                                                                                                                                 9,
                                                                                                                                                                                                                                                                                                                                                                                                                  flowering stage" cDNA from panicle
                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>.</u>.
 Embryophyta;
                                                                                                                                                                                                                                                                                                                               Length 314;
                                                                                                                    linear
(japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                   others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tsukuba,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sativa (japonica
                                                                                                                    EST 03-APR-2002 cultivar-group)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .affrc.go.jp/
 Tracheophyta;
                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                      a)
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ibaraki
                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                    flowering
                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
SOURCE
ORGANISM
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
AU031845/c
                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24 CGCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Cyza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
1 (bases 1 to 468)
                                                                                                                                                                                                                                                                                        Unpublished

Contact: Takuji Sasaki

Contact: Takuji Sasaki

National Institute of Agrobiological Resources

National Institute of Agrobiological Resources
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone R2118_6Z, mRNA sequence.
AU031845
AU031845.1 GI:3767818
EST.
                                                                                                                                                                                                                                               Tel: 81-298-38-7441
Fax: 81-298-38-7468
                                                                                                                                                                                                                                                                                    305-8602, Japan
                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AU031845 Rice root Oryza sativa (japonica cultivar-group)
                                                                                                                                                                                                                                                                                                                                                                        Minobe, Y. and Sasaki, T. Rice CDNA from root
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 305-8602, Japan
Tel: 81-298-38-7441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             National Institute of Agrobiological Resources
Rice Genome Research Program, Kannondai 2-1-2, Tsukuba, Ibaraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
Contact: Takuji Sasaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                              POLYA=No.
                                                                                                                                                                                                             PROJECT ='RGP'
                                                                                                                                                                                                                          Email: tsasaki@abr.affrc.go.jp,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fax: 81-298-38-7468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rice cDNA from callus (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sasaki, T. and Yamamoto, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1
                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tsasaki@abr.affrc.go.jp,
       /organism="Oryza sativa (japonica cultivar-group)"

/mol type="mRNA"

/cultivar="Nipponbare"

/db_xref="taxon:39947"

/clone="R2118 62"

/clone="R118 62"

/clone="R218 62"

/clone="Prepared from seedling root. "

99 c 118 g 121 t
                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="callus"
/clone_lib="Rice callus (2001)"
123 c 149 g 76 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Oryza sativa (japonica cultivar-group)"
|mol type="mRNA"
|cultivar="Nipponbare"
|db xref="taxon:39947"
|clone="C50247"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to 460)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 19; DB 9; Pred. No. 7.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                        URL:http://rgp.dna.affrc.go.jp/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           URL:http://rgp.dna.affrc.go.jp/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               others
                                                                                                                                                                                                                                                                                             Tsukuba, Ibaraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 01-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
AQ510461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14 ACCCTCTCATCCCTCTCGT 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Brhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: GGAAACAGCTATGACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 864 656 7288
Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wing, R.A. and Dean, R.A.
A BAC End Sequencing Framework to Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nbxb0095B03r CUGI Rice BAC Library Oryza sativa (japonica cultivar-group) genomic clone nbxb0095B03r, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: rwing@clemson.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Wing RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
AQ510461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AQ510461.1 GI:4733065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGCTCTCATCGCTCTCGT 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 585)
                      110
         /clone lib="CUGI Rice BAC Library"
/note="Vector: pBeloBAC11; Site 1: HindIII; Site 2:
HindIII; Rice is one of two most popular grains in the
world. Half of the world population especially those
inhabiting highly populated areas of the humid tropics
and subtropics, rely on rice as their primary source of
carbohydrate. Monocotyledonous rice is a diploid plant
(2n=24) with a haploid genome equivalent of 431 Mbp
(Arumuganathan and Earle, 1991). The relatively small
genome of rice, three times larger than that of
Arabidopsis, makes it suitable for genomic studies. In
order to facilitate positional cloning, physical mapping
and genome sequencing of rice, we have constructed a BAC
library from Oryza sativa, Nipponbare variety. The
library contains 36,864 clones with an average insert size
of 128.5 Kb providing 10.9 haploid genome equivalents. The
deep coverage allows the isolation a particular sequence
with a probability of 99.9 %. Two high density filters,
each containing 18,432 clones (doubly spotted), represent
the whole library for colony screening."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="Leaf"
/lab_host="E. coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:39947"
/clone="nbxb0095B03r"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Oryza sativa
/mol_type="genomic DNA"
/strain="Japonica"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . . 585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 19; DB 9; Pred. No. 7.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         coli DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                467.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (japonica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the Rice Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS 04-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

Query Match Best Local Similarity

36.5%; Score 19; DB 28; ilarity 100.0%; Pred. No. 7.9; Conservative 0; Mismatches 0

0

0

Gaps

0

Length 585; Indels

Matches

19;

MO.

in

```
RESULT 13
CB939902/c
LOCUS
                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
CB684405
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                       KEYWORDS
                                                          VERSION
                                                                        ACCESSION
                                                                                                        DEFINITI 'N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                       406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19
                                                                                                                                                                                                                                    24
      Ictalurus
Ictalurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 520 626 3967
Fax: 520 621 9288
Email: http://genome.arizona.edu
PCR PRimers
                                                                               l Similarity
19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq
                                                      CB939902 - GI:30225293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BACKWARD: gga aac agc tat gac cat g
Plate: 13 row: O column: 03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arizona Genomics Institute University of Arizona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
Contact: Rod Wing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jannasuriyarat, C., Lu,G., Gowda, M., Hatfield, J., Zhou, B., Mazur, E., Kudrna, D., Dean, R., Soderlund, C., Wing, R. and Wang, G. Large-scale identification of ESTs involved in the interaction between rice and Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CB684405.1 GI:29688130
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone OSJNEf13003
CB684405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CB684405 758 bp mRNA linear EST 09-OSJNEf13003.r OSJNEf Oryza sativa (japonica cultivar-group) clone OSJNEf13003 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: gta aaa cga cgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biological Sciences West,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ehrhartoideae;
                                                                                                                                                                                                                        CGCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                       cecrerecrecrecese 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCATCGCTCTCGTCGCTG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCATCGCTCTCGTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 758)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  primer: gga aac agc tat gac cat
   Location/Qualifiers
                                                                                                                                                                                                                                                                 36.5%; Score 19; DB larity 100.0%; Pred. No. 8. Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                /clone lib="OSJNEf"
/note="Vector: pBluescript II KS
XhoI; Uninfected Control"
246 c 198 g 177 t
                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="Leaf"
/dev_stage="3 week"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Oryza sativa (japonica cultivar-group)"
/mol type="mRNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947".
      punctatus (channel catfish) punctatus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone="OSJNEf13003"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cca gtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 448A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P.O.
                                                                                                                                                                                                                                                                                                  DB 14; Length 758;
                                                                                                                                                                                                                                                                                  8.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                     punctatus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Box
                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210088,
                                                                                                                                                                                                                                                                                                                                                                                   .
                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                               Site_1:
                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tucson,
                                                                                                     Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 09-APR-2003
                                                                                                                                                                                                                                                                                                                                                                               EcoRI; Site_2:
                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΑZ
                                                                                                                                                                                                                                                                 0
                                                                                                                                JOURNAL COMMENT
                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                               RESULT 14
BE039817/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
   FEATURES
                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                 TITLE
                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16
                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzae; Oryza.

1 (bases 1 to 978)
Bohnert, H. J., Borchert, C., Brazille, S., Brooks, J., Eaton, M., Ferre, H., Kawasaki, S., McCollough, A., Michalowski, C.B., Palacio, C., Scara, G., Wheeler, M. and Zepeda, G.R.
Functional Genomics of Plant Stress Tolerance
                                                                                            University of Arizona
Bio Sciences West room 513,
                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                              Oryza sativa
Oryza sativa
                                                                                                                                                                                                                                                                                                                                                              BE039817
OC08E11 OC Oryza sativa
BE039817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: gwaldbieser@ars.usda.gov
Single pass sequencing. Bases called with Phred v0.000925.c.
quality bases and vector trimmed with Lucy v1.16.
Plate: 9 row: G column: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 Experiment Station Road, Stoneville, Tel: 662 686 3593 Fax: 662 686 3567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bengten,E., Khayat,M., Middleton,D., Waldbieser,G., Askovic,S., Jensen,K.T., Warr,G., Miller,N., Clem,L.W. and Wilson,M. Identification of expressed genes in mixed leukocyte culture and a macrophage cell line in channel catfish, Ictalurus punctatus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Siluriformes; Ictaluridae; Ictalurus.
                                                                 Tel: 520-621-7982
Fax: 520-621-1697
                                                                                                                               Contact: Michalowski, C.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Catfish Genetics Research Unit USDA-Agricultural Research Service
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
BE039817.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seq primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Waldbieser GC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCTCATCGCTCTCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTCTCATCGCTCTCGTCG 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 767)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                cbm@u.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="IpCGJx14"
/note="Vector: pSport1; Site_1: Sal 1; Site_2: Not 1;
Primary library"
1 169 c 271 g 77 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IpCGJx14_9_G08"
/cell_type="macrophage"
/cell_line="42TA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /dev_stage="adult"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="commercial"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Ictalurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:7998"
                                                                                                                                                                                                                                                                                                                                                GI:8334833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 19;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 488
                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                Tucson,
                                                                                                                                                                                                                                                                                                                                                                             5 p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            punctatus"
                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8.4;
                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                ΑZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 767;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38776,
```

EST

07-JUN-2000

0

Caps

0

```
KEYWORDS
SOURCE
ORGANISM
                                $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
BG163853/c
                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                      Matches
                                                                                 Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                   source
         1632 CGCTCTCATCGCTCTCGTC 1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            168
                                       15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14 ACGCTCTCATCGCTCTCGT 32
                                                                                                                                                                                                                                                                                                                                                                                                             CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG163853 1712 bp m
602343204F1 NIH_MGC_89 Homo sapiens
                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                 Plate: LLAM10243 row: h column: 02
High quality sequence stop: 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG163853
BG163853.1 GI:12670556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence
                           CGCTCTCATCGCTCTCGTC 33
                                                                                                                                                 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     232
                                                                    Conservative
                                                                                                                                    /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone="IMAGE:4453297"
/tissue_type="hypernephroma, cell line"
/tab host="0H10B (phage-resistant)"
/clone_lib="NH1B (phage-resistant)"
/clone_lib="NH1H MGC_89"
/note="Organ: kIdney; Vector: pCMV-SPORT6; Site_l: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT_primed.
Average insert size 1.3 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
91 a 415 c 350 g 256 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:4530"
/tissue_type="roots"
/dev_stage="1 week"
/clone_lib="0C"
/note="no_stress"
a 188 c 313 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Oryza sativa"
|mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strain="Pokkali"
                                                                              36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.5%; Score 19; DB 1
100.0%; Pred. No. 8.8;
cive 0; Mismatches
                                                                   Score 19; DB 10; Length 1712; Pred. No. 10; O; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   244 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA clone IMAGE:4453297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 978;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 06-FEB-2001
                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ທຸ
                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
KEYWORDS
SOURCE
RESULT 17
BI568671/c
                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 16
AQ845447/c
LOCUS
                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                          Matches
                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                         Local
                                                                                           20
                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       profiling
                                                                                                                                                                                                     90
```

문 ঠ

밁

```
Library construction: Natalia S. Akopyants, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
If using this information please cite:
N.S. Akopyants and S.M. Beverley 'A survey of the Leishmania major
Friedlin strain VI genome by shotgun sequencing, and the Washington
University Genome Sequencing Center For information on obtaining
clone material please contact: Natalia S. Akopyants Ph.D.
(natalia@borcim_wustl.edu) and/or Stephen M. Beverley Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Other_GSSs: lm25f07.x1
Contact: Akopyants, NS /
WashU Leishmania Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AQ845447

AQ845447

LMAJFVI_lm25f07.yl Leishmania major FV1 random genomic library
Leishmania major genomic clone LMAJFV1_lm25f07 5', genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Akopyants, N.S., Clifton, S.W., Martin, J., Pape, D., Wylie, T., Li, L., Kissinger, J.C. Roos, D.S. and Beverley, S.M.
A survey of the Leishmania major Friedlin strain V1 genome by Shotgun Bequencing: a resource for DNA microarrays and expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Leishmania major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Class: shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer: -40RP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AQ845447.1 GI:6050095
                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       beverley@borcim.wustl.edu)
                                                                                                                                                                                                               TCATCGCTCTCGTCGCTG 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 368)
                                                                                                                                                                                                                                                                     34.6%; Silarity 100.0%; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       quality sequence stop: 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biochem. Parasitol. 113 (2), 337-340 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="LMAJFV1 lm25f07"
/lab host="TOP10 (Invitrogen)"
/clone lib="Leishmania major FV1 random genomic library"
/clone lib="Leishmania major FV1 random genomic library"
/note="Vector: p2ero-2 (Invitrogen); Site 1: EcoRV;
Genomic DNA was isolated from stationary phase cells. For this library, DNA was sheared to give a tight size distribution of 1-1.5kb fragments, blunt-ended with T4 DNA polymerase, dephosphorylated with Shrimp Alkaline phosphatase and ligated into p2ero-2 vector's EcoRV site."
a 94 c 123 g 61 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Leishmania major"
/mol_type="genomic DNA"
/strain="Friedlin strain V1"
/db_xref="taxon:5664"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                  Score 18; DB 28;
Pred. No. 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Beverley,
546 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    368 bp
mRNA
                                                                                                                                                                                                                                                                                                                                  Length 368;
linear
EST 06-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSS 25-MAY-2001
                                                                                                                                                                                                                                                                        <u>,,</u>
                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                     0
```

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                      RESULT 18
BI583892/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                              REFERENCE
                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                             AUTHORS
                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                         21
                                                                                         EST.

Drosophila melanogaster (fruit fly)

Drosophila melanogaster

Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;

Eukaryota; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stapleton, M., Brokstein, P., Hong, L., Tyler, D., Berman, B., Carlson, J., Champe, M., Chavez, C., Dorsett, V., Farfan, D., Frise, E., George, R., Gonzalez, M., Guarin, H., Harris, N., Li, P., Liao, G., Misra, S., Mungall, C.J., Nunoo, J., Pacleb, J., Paragas, V., Park, S., Phouanenavong, S., Wan, K., Yu, C., Lewis, S.E., Celniker, S. and Rubin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RH40331.5prime RH Drosophila melanogaster normalized Head pFlc-1
Drosophila melanogaster cDNA clone RH40331 5, mRNA sequence.
BI568671
BI568671.1 GI:15460093
Stapleton, M., Brokstein, P., Hong, L., Tyler, D., Berman, B., Carlson, J., Champe, M., Chavez, C., Dorsett, V., Farfan, D., Frise, E., George, R., Gonzalez, M., Guarin, H., Harris, N., Li, P., Liao, G., Misra, S.,
                                                                                                                                                                                                                                       B1583892

RH22614.5prime RH Drosophila
Drosophila melanogaster cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: http://www.fruitfly.org/EST, est@fruitfly.berkeley.edu hit genomic AE003466: arm:ZR [19937589,20220687] estimated-cyto:60E8-60F4: 08/18/2001 plate: RH.403 row: C column: 7 High quality sequence stop: 508.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lawrence Berkeley National Lab
One Cyclotron Rd, Berkeley, CA 94720,
Fax: 510 486 6798
                                                            Neoptera; Endopterygota; Diptera; Brachycera; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 558)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BDGP/HHMI RH Drosophila EST Project Unpublished Contact: Stapleton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                      BI583892.1 GI:15475314
                                                                                                                                                                                                                         BI583892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ຸດ
ເຄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                   CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 546)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /sex="male and female"
/dev stage="Adult"
/lab_host="DH5-alpha TonA"
/clone lib="RH Drosophila melanogaster normalized Head
pFlc-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Organ: head; Vector: pFlc1; Site 1: XhoI; Site 2: BamHI; Library was kindly generated by Piero Carninci at the RIKEN. The library was normalized and excised using Cre recombinase. Plasmid cDNA library."

148 c 176 g 120 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:7227"
/clone="RH40331"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Drosophila melanogaster"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 18; DB 12; Length 546; Pred. No. 26; O; Mismatches O; Indels
                                                                                                                                                                                                                                          bp mRNA linear EST 00
melanogaster normalized Head
clone RH22614 5, mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                            sequence
                                                                                                                                                                                                                                                                               EST 06-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                        pFlc-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 19
BI626323/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18;
```

```
l (bases 1 to 610)

1 (bases 1 to 610)

1 (bases 1 to 610)

Stapleton, M., Brokstein, P., Hong, L., Tyler, D., Berman, B., Carlson, J., Champe, M., Chavez, C., Dorsett, V., Farfan, D., Frise, E., George, R., Gonzalez, M., Guarin, H., Harris, N., Li, P., Liao, G., Misra, S., Mungall, C.J., Nunco, J., Pacleb, J., Paragas, V., Park, S., Mungall, C.J., Nunco, J., Pacleb, J., Paragas, V., Park, S., Man, K., Yu, C., Lewis, S.E., Celniker, S. and Rubin
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Drosophila melanogaster
Eukaryota, Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Neoptera; Drosophilidae; Drosophila.
Email: http://www.fruitfly.org/EST, est@fruitfly.berkeley.edu
htt genomic AE003786: arm:2R [607836,924593]
estimated-cyto:41F5-41F9: 08/23/2001
Plate: RH.670 row: A column: 6
                                                                                                                                                                                              Unpublished Contact: Stapleton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BI626323 610 bp mRNA linear EST 07-SEP-2 RH67006.5prime RH Drosophila melanogaster normalized Head pFlc-1 Drosophila melanogaster cDNA clone RH67006 5, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  One Cyclotron Rd, Fax: 510 486 6798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mungall,C.J., Nunoo,J., Pacleb,J., Paragas,V., Park,S., Phouanenavong,S., Wan,K., Yu,C., Lewis,S.E., Celniker,S.,G.M.
                                                                                                One Cyclotron Rd, Fax: 510 486 6798
                                                                                                                           BDGP
Lawrence Berkeley National Lab
Berkeley, CA
                                                                                                                                                                                                                                                       BDGP/HHMI RH Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BI626323.1 GI:15521848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: http://www.fruitfly.org/EST_est@fruitfly.berkeley.edu
hit genomic AE003786: arm:2R [607836,924593]
estimated-cyto:41F5-41F9: 08/17/2001
Plate: RH.226 row: B column: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BDGP/HHMI RH Drosophila EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lawrence Berkeley National Lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          quality sequence stop: 501.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Organ: head; Vector: pFlc1; Site 1: Xho1; Site 2: BamH1; Library was kindly generated by Piero Carninci at the RIKEN. The library was normalized and excised using Cre recombinase. Plasmid cDNA library."

152 c 180 g 124 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /dev_stage="Adult"
/lab_host="DH5-alpha TonA"
/clone_lib="RH Drosophila melanogaster normalized Head
pFlc-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stapleton, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/mol type="mRNA"
/db xref="texon.7227"
/clone="RH22614"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /sex="male and female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 18;
Pred. No.
                                                                                                                                                                                                                                                       EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                           94720,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12;
                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 558,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 07-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and Rubin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 20
AZ208101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 18
                                                                                                                                                                                                                                                                                                                                       MEDLINE
                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                 Contact: Cameron, RA, Davidson, EH
Division of Biology 156-29
California Institute of Technology
                                                                                                                                                                    Plate: 136 row: L column:
Seq primer: T7
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                           Libases 1 to 936)

(Cameron,R.A., Mahairas,G., Rast,J.P., Martinez,P., Biondi,T.R., Cameron,R.A., Mahairas,G., Poustka,A.J., Livingston,B.T., Wray Swartzell,S., Wallace,J.C., Poustka,A.J., Livingston,B.T., Wray Swartzell,S., Wallace,J.C., Lehrach,H., Britten,R.J, Davidson,E.H. ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strongylocentrotus purpuratus
Eukaryota; Metazoa; Echinodermata; Eleutherozoa;
Echinoidea; Euechinoidea; Echinacea; Echinoida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AZ208101 936 bp DNA linear GSS 31-AUG-2000 SP_0136_B1_F01_T7A Strongylocentrotus purpuratus, purple sea urchin , sperm genomic BAC library Strongylocentrotus purpuratus genomic clone Plate=136 Col=1 Row=L, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                      additional resources
Proc. Natl. Acad. Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                      A sea urchin genome project: Sequence scan, virtual map,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High
                                                                                                                                                                                                                   Email: acameron@caltech.edu
                                                                                                                                                                                                                                                                      Pasadena California 91125, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Strongylocentrotus purpuratus
                                                                                                                                                                                                                                                                                                                                         10920195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Strongylocentrotidae; Strongylocentrotus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCGCTCTCGTCGCTGC 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    115
                                                                                                                                 quality sequence stop:
Location/Qualifiers
                                                                                                                                                                                                                                     (626) 395-8421
(626) 793-3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     quality sequence stop: 525
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
          /organism="Strongylocentrotus purpuratus"
/mol type="genomic DNA"
/db_xref="taxon:7668"
/clone="Plate=136 Col=1 Row=L"
/clone_lib="Strongylocentrotus purpuratus, purple sea
/cream genomic BAC library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Organ: head; Vector: pFlc1; Site 1: XhoI; Site 2: BamHI; Library was kindly generated by Piero Carninci at the RIKEN. The library was normalized and excised using Cre recombinase. Plasmid cDNA library."

163 c 198 g 133 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /lab_host="DH5-alpha TonA"
/clone_lib="RH Drosophila melanogaster normalized Head
pFlc-1"
     /note="Organ:
                                                                                                                        1. .936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="male and female"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Drosophila melanogaster"
/mol_type="mRNA"
/db xref="caxon:7227"
/clone="RH67006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:8420375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                     Davidson, EH, Hood,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 18; DB 12;
Pred. No. 27;
sperm; Vector: BACe3.6; BAC Clones in E-Coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                    936
                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                   (17), 9514-9518 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Echinozoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                             1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CNS01736
LOCUS
                                                                                                                                             RESULT 22
BF307868
                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                              ঠ
                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                               KEYWORDS
                                                               VERSION
                                                                                ACCESSION
                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                               Query Match
Best Local
               ORGANISM
                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                   192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     227
```

```
953 CATCGCTCTCGTCGCTGC 970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607 TCTCATCGCTCTCGTCGC
                                                                                                                                                                                                                                                                                                                                   21 CATCGCTCTCGTCGCTGC 38
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (23-UIL-1999) Genoscope - Centre National de Sequencage : Submitted (23-UIL-1999) Genoscope - Centre National de Sequencage : BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)

Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EDGP) - http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18 TCTCATCGCTCGCGC 35
                                                                                                                                                                         BF307868 1083 pp 601890683F1 NIH_MGC_17 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 1012)
                                                                                                                                                 mRNA sequence.
BF307868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CNS01736 Incar GSS 26-JUL-19
Drosophila melanogaster genome survey sequence T7 end of BAC
BACN17C24 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                           BF307868.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BACN17C24 of DrosBAC library ffly), genomic survey sequence.
                                                                                  Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL107532.1 GI:5627836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fly), genomic
AL107532
                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /plasmīd="pBeloBAC11"
/note="end : T7"
287 c 249 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:7227"
/clone="BACN17C24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Drosophila melanogaster"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="DrosBAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                           GI:11255033
                                                                                                                                                                                                                                                                                                                                                                                                                  34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                  Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          163
                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315
                                                                                                                                                                                                                                                                                                                                                                                                                  30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ct
                                                                                                                                                                                      cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                     29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      others
                                                                                                                                                                                    IMAGE:4131836 5'
                                                                                                                                                                                                          EST 21-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS 26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 23
CNSOOATX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
Direct Submission

Submitted (02-UN-1999) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
- Web : www.genoscope.cns.fr)
Determination of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP).
The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial ECORI digestion of Drosophila DNA provided by the BDGP from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNSODATX 1101 bp DNA linear GSS 04-JUN-1999 Drosophila melanogaster genome survey sequence T7 end of BAC # BACR22L05 of RPCI-98 library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov plate: LLCM1030 row: e column: 21 High quality sequence stop: 466.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (fruit fly)
Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL056234.1 GI:4936801 GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fly), genomic survey sequence. AL056234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                         Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) CNA Sequencing by: Incyte Genomics, Inc. Consortium (CLNL) Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAGTTCTCTCACGCTC 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCAGTTCTCTCACGCTC 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 1083)
                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1101)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              218 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="maxn;
/db_xref="taxon:9606"
/clone="IMAGE:4131836"
/tissue_type="rhabdomyosarcoma"
/tab_host="DH10B_(phage-resistant)"
/lab_host="DH10B_(phage-resistant)"
/lab_host="DH10B_(phage-resistant)"
/lab_host="DH10B_(phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=Togan: muscle; Vector: pOTB7; Site 1: EcoRI;
Site 2: XhoI; cDNA made by oligo-dT priming.
Directionally cloned into EcoRI/XhoI sites using the following 5 adaptor: GGCACGAG(G). Size-selected $500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies)."

363 c 318 g 184 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Homo sapiens"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

밁

CATCGCTCTCGTCGCTGC 158

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 24
CNS014JW/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
ঠ
                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rocus
                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21 CATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                             Web: www.genoscope.cns.fr)

Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EDGP) - http://www.edgp.ebi.ac.uk -. This Drosophila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 1101)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BACN12F17 of DrosBAC library ifly), genomic survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster genome survey sequence T7 end of BAC BACN12F17 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isogenic strain y2; on bw sp, the same strain used for the BDGP's Pl and EST libraries. A more detailed description of the library and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AL104246
AL104246.1 GI:5615857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CNS014JW
                                                                                                                                                                                                                                                                                                                                 pBeloBAC11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               found at http://bacpac.med.buffalo.edu/drosophila_bac.htm
                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           254 a
                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                    a
                                                                                                                                    /note="end
261 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="RPCI-98"
/note="end : T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/db_xref="taxon:7227"
/clone="BACR22L05"
                                                                                                                                                                      /clone_lib="DrosBAC"
/plasmid="pBeloBAC11"
                                                                                                                                                                                                             /mol_type="genomic DNA"
/db_xref="taxon:7227"
/clone="BACN12F17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                   organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             295 c
                                                          100.0%;
                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                          Score 18;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 18;
Pred. No.
                                                                                                                                T7"
315 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       253 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1101 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               p DNA linear GSS 26-J
survey sequence T7 end of BAC
                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           226 t
                                                          30;
                                                                          DB 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                    H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>.</u>.
                                                                            Length 1101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1101;
                                                                                                                                    34 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73 others
                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS 26-JUL-1999
                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                              COMMENT
                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                   CD262900/c
                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BI123995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Snoo
                                                                                                                                                                                                 TITLE
                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                           1 (bases 1 to 359)
Tyler, B.M., Judelson, H.S., Gijzen, M., E
USDA-IFAFS: Expression of Phytophthora
                                                                                                                                                                                                                                                                                                                                                                          CD262900 359 bp mRNA linear EST 23-MAY-2 psMA019xK10f_192458 sMA: Phytophtora sojae grown in synthetic medium Phytophthora sojae cDNA clone sMA019K10 5, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Populus tremula x Populus tremuloides
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids I; Malphyhiales; Salicaceae; Populus.

1 (bases 1 to 343)
                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                        Phytophthora sojae
Phytophthora sojae
                                                                                                                                                                                                                                                                                                                                            CD262900
CD262900.1 GI:31050727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Department of Biotechnology
Royal Institute of Technology
Teknikringen 30, Stockholm S-10044, Sweden
Plate: 019
                    FORWARD:
                                                     Email: bmtyler@vt.edu
                                                                    1880 Pratt Dr., Blacksburg,
Tel: 540-231-7318
                                                                                                                         Tyler lab
                                                                                                                                                                                                                                                                     Eukaryota; stramenopiles;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 46 8 790 8287 Fax: 46 8 245452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hertzberg,M., Aspeborg,H., Erlandsson,R., Bjorkbacka,H., Hiltonen, T., Karlsson,J., Teeri,T., Gustafsson,P., Bahlerao,R., Jansson,S., Nilsson,O., Sundberg,B., Nilsson,P., Uhlen,M., Sandberg,G. and Lundeberg,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BI123995.1 GI:18007970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1033P32P Populus leaf cDNA library Populus tremula x Populus
tremuloides cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Erlandsson R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene expression in Populus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Populus tremula x Populus tremuloides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCTCATCGCTCTCGT 32
                                  PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32.7%; Score 17; ilarity 100.0%; Pred. No. Conservative 0; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rikerl@biochem.kth.se.
Location/Qualifiers
                 BK reverse
                                                                                                                                            Tyler B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Populus tremula x Populus tremuloides"
|mol_type="mRNA"
|/mol_type="mRNA"
|/db_xref="taxon:47664"
|/clone_ilb="Populus leaf cDNA library"
|/note="Organ: leaf"
|89 c 58 g 121 t
row: K
column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              343 bp
                                                                                                                                                                                                                                                                  Oomycetes; Pythiales; Pythiaceae;
10
                                                                                       VA 24061, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 12; Length 343; 80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                           Dean,R.A. and Waugh,M.E.
a sojae genes during infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                              EST 23-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 31-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 27
BY076213/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                Nikaido, I., Osato, N., Saito, R., Suzuki, H., Yamanaka, I., Kiyosawa, H., Nikaido, I., Osato, N., Saito, R., Suzuki, H., Yamanaka, I., Kiyosawa, H., Yagi, K., Tomaru, Y., Hasegawa, Y., Nogami, A., Schonbach, C., Gojobori, T., Baldarelli, R., Hill, D.P., Bult, C., Hume, D.A., Quackenbush, J., Schimil, L.M., Kanapin, A., Matsuda, H., Batalov, S., Dalla, B., Dragani, T.A., Fletcher, C.F., Forrest, A., Frazer, K.S., Gastberland, T., Gariboldi, M., Gissi, C., Godzik, A., Gough, J., Grimmond, S., Gustincich, S., Hirokawa, N., Jackson, I.J., Jarvis, E.D., Kanai, A., Kawaji, H., Kawasawa, Y., Kedzierski, R.M., King, B.L., Konagaya, A., Kurochkin, I.V., Lee, Y., Lenhard, B., Lyons, P.A., Maglott, D.R., Maltais, L., Marchionni, L., McKenzie, L., Miki, H., Nagashima, T., Numara, K., Okido, T., Pavan, W.J., Pertea, G., Petrovsky, N., Pillai, R., Pontius, J.U., Qi, D., Ramachandran, S., Ravasi, T., Reed, J.C., Reed, D.J., Raid, J., Ring, B.Z., Ringwald, M., Sandelin, A., Schneider, C., Semple, C.A., Setou, M., Shimada, K., Sutana, R., Takenaka, Y., Taylor, M.S., Teasdale, R.D., Tomita, M., Verardo, R., Wagner, L., Wahlestedt, C., Wang, Y., Watenabe, Y., Wells, C., Wilming, L.G., Wynshaw-Boris, A., Yanagisawa, M., Yang, I., Yang, L., Zavolan, M., Zhu, Y., Zimmer, A., Makamura, Sakazume, N., Sato, K., Shiraki, T., Waki, K., Kawai, J., Aizawa, K., Azakawa, T., Fukuda, S., Hara, A., Hashizume, W., Imotani, K., Ishii, Y., Itch, M., Kagawa, I., Miyazaki, A., Sakai, K., Sasaki, D., Shibata, K., Shinagawa, A., Yasunishi, A., Yoshino, M., Waterston, R., Lander, D., Sato, C., Sato, S., Sakai, K., Lander, A., Lander, C., Sato, S., 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17;
Laboratory for Genome Exploration Research Group, Sciences Center(GSC), Yokohama Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY076213

BY076213 RIKEN full-length enriched, pooled tissues, adult etc. Mus musculus cDNA clone K630003D15 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: BK reverse High quality sequence
                             Laboratory for Genome
                                                           Contact: Yoshihide Hayashizaki
                                                                                                                       22354683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Okazaki, Y., Furuno, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY076213.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCTCGTCGCTGCCGG 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCTCGTCGCTGCCGG 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 374)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="sMA: Phytophtora sojae grown in synthetic medium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Vector: pBK-CMV; Site_1: EcoRI; Site_2: XhoI"
125 c 106 g 55 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:67593"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism≃"Phytophthora/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tissue_type="mycelium"
cell_line="P6497"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="sMA019K10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:26177732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 17; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   stop: 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kasukawa, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 14;
81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sojae"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adachi, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bono, H.,
                          RIKEN Genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    adult spleen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
BASE COUNT
ORIGIN
                                                                                                           AU029704/c
LOCUS
                                                                    DEFINITION
                                                                                                                                                                        RESULT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                         374 ATCGCTCTCGTCGCTGC 358
                                                                                                                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of a nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001) cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human Genome Sequences Mamm. Genome. 12, 673-677 (2001)
Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes. Genome Res. 10 (10), 1617-1630 (2000)
RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: genome-res@gsc.riken.go.jp,
URL:http://genome.gsc.riken.go.jp/
Aizawa,K., Akimura,T., Arakawa,T., Carninci,P., Fukuda,S., Hirozane
Aizawa,K., Rimura,T., Arakawa,T., Konno,H., Miyazaki,A.,
T., Imotani,K., Ishii,Y., Itoh,M., Kawai,J., Konno,H., Makai,K.,
Murata,M., Nakamura,M., Nomura,K., Numazaki,R., Ohno,M., Sakazume,N., Sasaki,D., Sato,K., Shibata,K., Shiraki,T., Tagami
..., Maki,K., Watahiki,A., Muramatsu,M. and Hayashizaki,Y. Direct
AU029704 Rice panicle shorter than 3cm Oryza sativa (japonica cultivar-group) cDNA clone E31310_6Z, mRNA sequence.
AU029704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1-7-22 Suehiro-cho,
Tel: 81-45-503-9222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fax: 81-45-503-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prepare mouse tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Computational Analysis of Full-Length Mouse cDNAs Compared with tuman Genome Sequences Mamm. Genome. 12, 673-677 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Please visit our web site (http://genome.gsc.riken.go.jp) for
                                                                                                                                                                                                                                                                                                                                         ATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Institute of Physical and Chemical Research (RIKEN)
22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="feet"//notes |
/notes |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     adult spleen, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="mRNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Mus musculus"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="K630003D15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                          32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _lib="RIKEN full-length enriched, pooled tissues,
spleen, etc."
                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                          Score 17; DB 13; Length 374; Pred. No. 81; 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           144 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 t
                                                                                                EST 01-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 29
3F008574/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        americanum cDNA,
BF008574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Amblyomma americanum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: 81-298-38-7441 Fax: 81-298-38-7468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            305-8602, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                             Email: HILL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               approach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Parasitiformes; Ixc
1 (bases 1 to 406)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Amblyomma americanum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROJECT ='RGP'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32.7%;
```

밁 ঠ

```
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  162 CTCTCGTCGCTGCCGGC 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26 CTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Cyza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.

1 (bases 1 to 404)
                                                                                                                                                                                                                                                                                                                                Hill, C.A and Gutierrez, J.A.

Analysis of the expressed genome of the lone star tick,
americanum (Acari:Ixodidae) using an expressed sequence
                                                                                                                                             Animal Science Discovery Research Elanco Animal Health, A Division of Eli Lilly and Company PO Box 708, 2001 West Main St., Greenfield, IN 46140, USA Tel: 317 277 0826 Fax: 317 277 4522
                                                                                                                                                                                                                                                                   Microb. Comp. Genomics 5 (2), 89-101 (2000) In press Contact: Hill CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BF008574 406 bp mRNA linear EST 06-OCT-1613456 Amblyomma americanum larva Lambda Zap Express Amblyomma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Takuji Sasaki
National Institute of Agrobiological Resources
Rice Genome Research Program, Kannondai 2-1-2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AU029704.1 GI:3762952
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Acari;
Parasitiformes; Ixodida; Ixodidae; Amblyomma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rice cDNA from panicle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sasaki, T. and Yamamoto, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF008574.1 GI:10708849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tsasaki@abr.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/
/organism="Amblyomma americanum"
/mol_type="mRNA"
/db_xref="taxon:6943"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="shorter than 3cm"
/clone_lib="Rice panicle shorter than 3cm"
/note="Organ: panicle"
89 c 125 g 97 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Oryza sativa
/mol_type="mRNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947"
                                                                                          LL_CATHERINE_A@LILLY.COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone="E31310_6Z"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 404;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cultivar-group) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tsukuba, Ibaraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 06-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                          cag
                                                                                                                                                                                                                                                                                                                                                                 Amblyomma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
SOURCE
ORGANISM
                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AW465276/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 30
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 217 333 5998

Fax: 217 244 5617

Email: h-lewin@uiuc.edu

Email: h-lewin@uiuc.edu

Funding for cattle EST sequencing was provided by the USDA National

Funding for cattle EST sequencing was provided by the USDA National

Funding for cattle EST sequencing was provided by the USDA National

Funding for cattle EST sequencing was provided by the USDA National

Funding for cattle EST sequencing was provided by the USDA National

Form Washington University Genome Center PHRAP suite.

Sequences submitted are vector free and at least 200 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ATGCAGTTCTCTCACGC 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17;
                                                                                                                                                                                                                                                                                                                                                               FORWARD: TAATACGACTCACTATAGGG
BACKWARD: ATTAACCCTCACTAAGG
Insert Length: 425 Std Error: 0.00
Plate: BP230018B10 row: F column: 10
Seq primer: AGCGGATAACAATTCACACAGGA
High quality sequence stop: 425.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61801,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W. M. Keck Center for Comparative and Functional Genomics
University of Illinois at Urbana-Champaign
340 Edward R. Madigan Laboratory, 1201 W. Gregory Dr., Ur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AW465276
AW465276.1 GI:7035444
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished Contact: Lewin, H. A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AW465276 425 bp mRNA linear EST 24-FEB-2.
BP230018B10F10 Soares normalized bovine placenta Bos taurus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone BP230018B10F10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovine ESTs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus (cow)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lewin, H.A., Soares, M.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCAGTTCTCTCACGC 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 425)
                                                                                93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
                                                                 /note="Organ: placenta; Vector: pT7T3Pac; Site 1: EcoRI; Site 2: NotI; The cDNA library was contributed by the Soares laboratory and it was constructed and normalized as described by Bonaldo, M.F., Lennon, G. and Soares, M.B. (1996), Genome Research 6(9): 791-806. "
                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/mol_type="mRNA"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /dev stage="larva"
/clone_lib="Amblyomma americanum larva Lambda Zap Express"
/note="Vector: pBK-CMV; Site_1: EcoRI; Site_2: XhoI"
91 c 118 g 101 t 4 others
                                                                                                                                                                                              /clone_lib="Soares normalized bovine placenta"
                                                                                                                                                                                                                     lab_host="DH10B"
                                                                                                                                                                                                                                               'sex="female"
                                                                                                                                                                                                                                                             clone="BP230018B10F10"
  32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
  Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rebeiz, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .
83;
  DB 9;
84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pardinas,J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                   Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gregory Dr., Urbana,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Liu, L. and Larson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 24-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
DEFINITION
ACCESSION
VERSION
                                                                                                               RESULT 32
AW376507/c
                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 31
AW056821
LOCUS
                                                                                                                                                                                     밁
                   SOURCE
                                                                                                   POCUS
                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
   ORGANISM
                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                   Local Similarity hes 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      335 ATCGCTCTCGTCGCTGC 319
                                                                                                                                                                                    80
                                                                                                                                                                                                                 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22 ATCGCTCTCGTCGCTGC 38
                                             IL3-CT0213-161299-038-F12
AW376507
AW376507.1 GI:6881168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17;
Homo sapiens (human)
                                                                                                AW376507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Ross Whetten
Forest Biotechnology Group
North Carolina State University
Dept. of Forestry, NC State University, 6113 Jordan Hall, Raleigh
NC, 27695-8008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Coniferopsida; Coniferales; Pinaceae; Pinus; Pinus. 1 (bases 1 to 446)
Whetten, R.W., Kinlaw, C.S., Retzel, E. and Sederoff, R.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      University of Minnesota.
Seq primer: 5' lambda TriplEx2 Sequencing Primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: rosswhet@unity.ncsu.edu
Shoot tip library plates ST01-ST50 were prepared and sequenced
NCSU. Plates ST51-ST99 were prepared and sequenced at IFG/CSUH.
Informatics was done at the Computational Biology Centers (CBC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 919-515-7800
Fax: 919-515-7801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pinus taeda (loblolly pine)
Pinus taeda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ST56F10 Pine TriplEx shoot tip
ST56F10, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The Pine Gene Discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AW056821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AW056821.1 GI:5929516
                                                                                                                                                                                                   GTCGCTGCCGGCCTCGC 47
                                                                                                                                                                                GTCGCTGCCGGCCTCGC
                                                                                                                                                                                                                                                                                                                                       107
                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                            /lab_host="E. Coli BM25.8"
/clone lib="pine TriplEx shoot tip library"
/clone lib="pine TriplEx shoot tips (approx. 2 cm from the strip letter of the strip letter of the strip letter of the strip letter of the spring, frozen and used for mRNA isolation. The SMART-PCR method (Clontech) was used to prepare a library from 1 ug total RNA, using the Lambda TriplEx vector. Plasmid subclones in pTriplEx were recovered by cre-lox excision in E. coli strain EM25.8 and sequenced from the 5' end."

137 c 79 g 110 t 13 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:3352"
/clone="ST56F10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Pinus taeda"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . .446
                                                                                                                                                                                                                                                               32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kinlaw, C.S., Retzel, E. Discovery Project
                                                                                                                                                                                  96
                                                                                                                                                                                                                                                   <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                 Score 17;
Pred. No.
                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                            470 bp mRNA linear
CTO213 Homo sapiens cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 library
                                                                                                                                                                                                                                                               DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                Length 446;
                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
us taeda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Centers (CBC)
                                                                            mRNA
                                                                                            EST 04-FEB-2000
                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-SEP-1999
clone
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         at
                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
RESULT 33
BQ170403
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                COMMENT
                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 17
                                                                                                                                    JOURNAL
                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      276 ATCGCTCTCGTCGCTGC 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22 ATCGCTCTCGTCGCTGC 38
                                   Contact: Olin Anderson
US Department of Agriculture, Agriculture Research
West Area, Western Regional Research Center
800 Buchanan Street, Albany, CA 94710, USA
Tel: 5105595773
                                                                                                                                              i (bases 1 to 490)
Anderson,O.D., Chao,S., Choi,D.W., Close,T.J., Fentc, P.S., Hsia,C.C., Kang,Y., Lazo,G.R., Miller,R., Rat Seaton,C.L. and Tong,J.C.
The structure and function of the expressed portion genomes - Pre-anthesis spike cDNA library
                                                                                                                                                                                                                                                                                                                                                            BQ170403
490 bp mRNA linear EST 26-APR-2002 WHE1770 E05_J10ZT Wheat pre-anthesis spike cDNA library Triticum cDNA clone WHE1770_E05_J10, mRNA sequence.
BQ170403
BQ170403.1 GI:20332226
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?t1=IL3&t2=IL3-CT0213-
161299-038-F12&t3=1999-12-16&t4=1)
Seq primer: puc 18 forward
Use Primer: puc 18 forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010,
                                                                                                                                Genomes - P
Unpublished
                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fax:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brazil
Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 470)
HCGP http://www.ludwig.org.br/ORESTES.
The FAPESP/LICR Human Cancer Genome Project
                                                                                                                                                                                                                                                                                                                    Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                     Fax: 5105595818
                                                                                                                                                                                                                                                                                                                                        Triticum aestivum (bread wheat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                             Triticeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           quality sequence stop: 383.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
 oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/mol type="mRNA"
/db_xref="taxon:9606"
/dev_stage="Adult"
/clone_lib="CT0213"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Torgan: colon; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196. 716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 17; DB 9;
Pred. No. 85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                     Fenton, R.D., Han ., Rausch, C.J.,
                                                                                         Service, Pacific
                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Paulo-SP
                                                                                                                                                                    wheat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No. 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 34
BE484921/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
FEATURES
                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pocus
                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            124
```

```
345 CTCTCGTCGCTGCCGGC 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovidae; Lo. 505)
1 (bases I to 505)
Sonstegard, T., Capuco, A.V., White, J., V
Sonstegard, T., Capuco, A.V., White, J., V
                                                                                                                                                                                                                                      Contact: Sonstegard TS
USDA, ARS, Beltsville Agricultural Research Center
Bd1g. 200 Rm 2A, Beltsville, MD 20705, USA
Tel: 301 504 8416
Fax: 301 504 8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This EST was generated by sequencing from the 3' end of the Sequences have been trimmed to remove vector sequence and lo quality sequence with phred score less than 20. Seq primer: T7 primer.
                    Plate: 135 row: J column: 12
Seq primer: ATTTAGGTGACACTATAG
                                                                                                                   and -minmatch 12 options.
PCR PRimers
                                                                                                                                                         Email: tads@lpsi.barc.usda.gov
Single pass sequencing. Bases called and alt trimmed with phred
v0.980904.e. Vector identified by cross_match with the -minscore
                                                                                                                                                                                                                                                                                                                                                                                                                 the Bos taurus gene index
Mamm. Genome 13 (7), 373-379 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Quackenbush, J. Analysis of bovine mammary gland EST and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                171741 BARC 5BOV Bos taurus
BE484921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l Similarity
17; Conserv
                                                                  BACKWARD: GTTTTCCCAGTCACGACG
                                                                                            FORWARD: AGGAAACAGCTATGACCAT
                                                                                                                                                                                                                                                                                                                                                                   12140684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus (cow)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE484921.1
                                                                                                                                                                                                                                                                                                                                                                                            22135956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:465"
/db_xref="taxon:465"
/clone="WHE1770_B05_J10"
/tissue_type="Spike before anthesis"
/dev_stage="Adult plant"
/lab_host="E. coli SOLR"
/clone lib="Wheat pre-anthesis spike cDNA library"
/clone lib="Wheat pre-anthesis spike cDNA ibrary"
/clone lib="Wheat pre-anthesis spike cDNA kere grown in the
greenhouse. Whole spike with awns trimmed, white, green
and yellow anther were collected and total RNA, and
poly(A) RNA were prepared, a cDNA library was made, and
the cDNA clones were in vivo excised to give pBluescript
phagemids in the TJ Close lab (Choi, Close, Fenton) at
the University of California, Riverside. Plasmid DNA
preparations and DNA sequencing were performed in the OD
Anderson lab (all other authors)."
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="mRNA"
/cultivar="Chinese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Triticum aestivum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:9604454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32.7%; 500
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 13;
86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Van Tassell,C.P.,
J.E., Wells,K.D. a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               functional annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Connor, E.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone
                                                                                                                                                                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 35
BQ821431/c
                                                   ORIGIN
                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    342 ATCGCTCTCGTCGCTGC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Grossman, A., Chang, C.-W., Davies, J., Harris, E., Hauser, C., Lefeby, P., McDermott, J.P., Shrager, J., Silflow, C. and Stern, D. Analyses of the Chlamydomonas reinhardtii Genome: A Model, Unicellular System for Analyzing Gene Function and Regulation in Vascular Plants. Project: 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Duke University
Durham, NC 27708-1000
Tel: 919 613 8159
Fax: 919 613 8177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chlamydomonas reinhardtii Eukaryota; Chlorophyceae; Volvocales; Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales; Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BQ821431 506 bp mRNA linear EST 01-AUG-2002 1030092C04.yl C. reinhardtii CC-1690, Deflagellation (normalized), Lambda Zap II Chlamydomonas reinhardtii cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BQ821431
BQ821431.1 GI:22072093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: chauser@duke.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Charles Hauser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chlamydomonas reinhardtii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Box 91000
                                                                     98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                       /note="Vector: pBluescript II SK-; Site 1: EcoRI; Site 2: XhoI; Deflagellation library, constructed by John Davies and Jeffrey McDermott, combines CDNAs from CC-1690 cells which had been re-synthesizing flagella for 15 30 and 60 min after being deflagellated by pH shock. PolyA mRNA was purified from each sample, pooled and cDNA synthesized. The cDNA was directionally cloned into lambda Zap II (Stratagene) in the EcoRI (5') and XhoRI (3') sites. pBluescript II SK- plasmids were excised from the lambda ZAP clones by superinfection with ExAssist (Stratagene) phage. The library was normalized using method 4 described in Bonaldo et al., (1996) Genome Research 6: 791-806."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Vector: pCMV SPORT6; Site_1: NotI; Site_2: SalI; Library made from pooled mRNA isolated from mammary tissues at eight physiological, developmental, and disestates."
                                                                                                                                                                                                                                                                                                                                                /mol_type="mRNA"
/strain="CC-160" wild type mt+ 21gr"
/db xref="reaxon:3055"
/clone lib="C. reinhardtii CC-1690, Deflagellation
(normalized), Lambda Zap II"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Bos taurus"
/mol_type="mRNA"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Chlamydomonas reinhardtii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="pooled"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32.7%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     135 c
32.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lib="BARC 5BOV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 17; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175 g
  Score 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77 t
  DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10; Length 505;
87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
Length 506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              developmental, and disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 36
AI988643/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28 CTCGTCGCTGCCGGCCT 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   call: (800)-533-4363 or contact via
Insert Length: 810 Std Error: 0.00
Seq primer: -40RP from Gibco
High quality sequence stop: 429.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Shoemaker R/Public Soybean EST Project
Public Soybean EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shoemaker, R., Keim, P., Vodkin, L., Erpelding, J., Coryell, V., Khanna, A., Bolla, B., Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C. Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Materston, R., and Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST.

Glycine max (soybean)

Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: est@watson.wustl.edu
This clone is available through: ResGen, Invitrogen Corp.
South Memorial Parkway Huntsville, AL 35801 For further is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AI988643 529 bp mRNA linear EST 30-NOV-2001 sd05h05.yl Gm-c1020 Glycine max cDNA clone GENOME SYSTEMS CLONE ID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AI988643.1 GI:5820437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AI988643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gm-c1020-850 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 529)
       Conservative
                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="mRNA"
/db xrefi="taxon:3847"
/clone="GENOME SYSTEMS CLONE ID: Gm-c1020-850"
/tissue type="root nodules of greenhouse grown plants"
/lab_host="XL10-Gold"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Glycine max"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
GibcoBRL Life Technologies' cDNA Size Predigested
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pred. No. 87;
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       529 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              email: ccu@resgen.com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , Khanna
Beck, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 37
AV668034/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                밁
                                                       á
                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 17
                                                                                    Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                             source
                                375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AV668034
AV668034 Bos taurus ova:
5', mRNA sequence.
AV668034
AV668034.1 GI:9932779
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18 TCTCATCGCTCTCGTCG 34
                                                        22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                           Contact: Yoshikazu Sugimoto
Animal Genetics Division
Shirakawa Institute of Animal Genetics
Odakura, Nishigo, Nishi-shirakawa, Fuk
Tel: 81-248-25-5641
                                                                                                                                                                                                                                                                                                                     Single pass sequencing.
This clone was obtained from a polyA-deleted cDNA library.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                     . Similarity
17; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                Email: kazusugi@cocoa.ocn.ne.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Establishment of a high throughput EST sequencing system using poly(A) tail-removed cDNA libraries and determination of 36,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Takasuga, A., Hirotsune, S., Itoh, R., Jitohzono, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bos taurus (cow)
                                                                                                                                                                                                                                                                                                                                                                              Fax: 81-248-25-5725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic Acids Res. 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine ESTs
                                                  ATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTCATCGCTCTCGTCG 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 542)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sugimoto, Y.
                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                     Conservative
                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bos taurus ovary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vector (pBluescript II SK+) that has been digested with EcoRI and XhoI, and phosphorylated by Stratagene. Both the white and blue colonies appear to contain recombinant plasmids with cDNA inserts, based on size (n=56) and sequence (n=16). This library was constructed by Dr. Paul Keim and Dr. Virginia Coryell."

157 c 179 g 98 t 1 others
                                                                                                                                                     /clone libb"Bos taurus ovary fetus"
/note="Vector: pZL1; Site_1: Sal1;
was deleted from a Not1 site"
was 153 c 187 g 81 t .
                                                                                                                                                                                                          /tissue_type="ovary"
/dev_stage="fetus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                    /organism="Bos taurus"
/mol_type="mRNA"
/db_xref="taxon:9913"
/clone="E10V019D09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32.7%;
                                                                                                32.7%;
                                359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 17; Pred. No.
                                                                                     0
                                                                                                 Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (22),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E108 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 9;
                                                                                                 88
88
                                                                                                                                                                                                                                                                                                                                                                                                        Fukushima 961-8061,
                                                                                                              9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 529;
                                                                                                              Length 542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear EST 28-NOV-2001 CDNA clone E10V019D09
                                                                                    Indels
                                                                                                                                                                                Site_2: Not1; Poly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suzuki, H., Aso, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                  0,
                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                  0
                REFERENCE
AUTHORS
                                                                                                                                                                              RESULT 39
AV597173/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 38
AI542489/c
                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                SOURCE
                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                       ACCESSION
                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                 Takasuga, A., Hirotsune, S., and Sugimoto, Y.
                                                                                 Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster
                                       Bovidae; Bovinae; Bos.
                                                                                              Bos taurus (cow)
                                                                                                                          AV597173.1 GI:9714516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AI542489.2 GI:13771703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AI542489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04/13/2001
                                                                                                                                                                                                                                                                                                                       Similarity
                        (bases 1 to 546)
                                                                                                                                                                                                                                                                                                                                                                              119
                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                     32.7%;
                                                                                                                                                                                                                                                                                                        0
```

```
AI542489 544 bp mRNA linear EST 21-APR-2001 SD08831. Sprime SD Drosophila melanogaster Schneider L2 cell culture pOT2 Drosophila melanogaster cDNA clone SD08831 5 similar to AJ010298: Drosophila melanogaster retrotransposon-like element,
                                                                                                                                                                                                                         AV597173 Bos taurus cartilage E1CA030D01 5', mRNA sequence. AV597173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

1 (bases 1 to 549)
Harvey,D., Brokstein,P., Hong,L., Evans-Holm,M., Su,C., Tsang, Lewis,S. and Rubin,G.M.
BDGP/HHMI Drosophila EST Project
                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fax: 510 486 6798
Email: http://www.fruitfly.org/EST, est@fruitfly.berkeley.edu
hit genomic AE003350: arm:U [4635408,4651408] estimated-cyto:?:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
On Mar 19, 1999 this sequence version
Other ESTs: SD08831.3prime
Contact: Stapleton, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plate: SD.88 row: C column: 7
High quality sequence stop: 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lawrence Berkeley National Lab
One Cyclotron Rd, Berkeley, CA 94720, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Drosophila melanogaster"
/mol_type="mRNA"
/db xref="taxon:7227"
/db xref="taxon:7227"
/clone="SD08831"
/lab host="DH5-alpha"
/clone_1ib="SD Drosophila melanogaste
/culture_pOT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pOT2; Site 1: EcoRI; Site 2: Xho1; Sized fractionated cDNAs were directly ligated into pOT2. Plasmid cDNA library."

148 c 171 g 106 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
Itoh, R.,
                                                                                                                                                                                                                                                                          e fetus
n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               melanogaster Schneider L2 cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
  Jitohzono,
                                                                                                                                                                                                                                                                        Bos taurus cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 544;
                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gi:4459862
  Suzuki, H.,
                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                  EST 27-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
  Аво, Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AV603191/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                   FEATURES
                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 40
                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                 PUBMED
                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                     Contact: Yoshikazu Sugimoto
Animal Genetics Division
Shirakawa Institute of Animal Genetics
Odakura, Nishigo, Nishi-shirakawa, Fukı
Tel: 81-248-25-5641
Fax: 81-248-25-5725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fax: 81-248-25-5725
Email: kazusugi@cocoa.ocn.ne.jp
Single pass sequencing.
This clone was obtained from a polyA-deleted cDNA library.
Location/Qualifiers
                                         Email: kazusugi@cocoa.ocn.ne.jp
Single pass sequencing.
This clone was obtained from a polyA-deleted cDNA library.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV603191 556 bp mRNA linear EST 27-NOV-2001
AV603191 Bos taurus kidney fetus Bos taurus cDNA clone E1KI014F12
5', mRNA sequence.
AV603191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Animal Genetics Division
Shirakawa Institute of Animal Genetics
Odakura, Nishigo, Nishi-shirakawa, Fukushima
Tel: 81-248-25-5641
                                                                                                                                                                                                                                                                  Nucleic Acids Res. 29 (22), E108 (2001)
                                                                                                                                                                                                                                                                                                                                          and Sugimoto, Y.
                                                                                                                                                                                                                                                                                                                                                           Takasuga,A.,
                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Bovinae; Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AV603191.1 GI:9725517
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Establishment of a high throughput EST sequencing system using poly(A) tail-removed cDNA libraries and determination of 36,000 bovine ESTs
                                                                                                                                                                                                                                                                                     bovine ESTs
                                                                                                                                                                                                                                                                                                  Establishment of a high throughput EST sequencing system using poly(A) tail-removed cDNA libraries and determination of 36,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Yoshikazu Sugimoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bos taurus (cow)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic Acids Res. 29 (22), E108 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCGCTCTCGTCGCTGC 38
                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 556)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
1. .556
/organism="Bos taurus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="cartilage"
/dev_stage="fetus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/mol_type="mRNA"
/db_xref="taxon:9913"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone lib="Bos taurus cartilage fetus"
/note="Vector: pZL1; Site_1: Sal1; Site_2: Not1; Poly A
was deleted from a Not1 site"
148 c 180 g 89 t 3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="E1CA030D01"
                                                                                                                                                                                                                                                                                                                                                       Hirotsune, S., Itoh, R., Jitohzono, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32.7%; Score 17; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88;
                                                                                                                                                    Fukushima 961-8061, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961-8061, Japan
                                                                                                                                                                                                                                                                                                                                                         Suzuki, H., Aso, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
밁
                           á
                                                                                                                   BASE COUNT
ORIGIN
                                                          Best Loc
Matches
                                                                                    Query Match
                                                                     Local
359 ATCGCTCTCGTCGCTGC 343
                           22 ATCGCTCTCGTCGCTGC 38
                                                       h 32.7%; Score 17; DB Similarity 100.0%; Pred. No. 89, 17; Conservative 0; Mismatches
                                                                                                                                 127
                                                                                                                                 a
                                                                                                                                                                                       /mol_type="mRNA"
/db_xref="taxon:9913"
/clone="EIXIO14F12"
/tissue_type="kidney"
/dev_stage="fetus"
/lab_host="DH10B"
                                                                                                                              /clone_llb="Bos taurus kidney fetus"
/note="Vector: pZL1; Site_1: Sal1; Site_2: Not1; Poly A
was deleted from a Not1 site"
150 c 187 g 89 t 3 others
                                                                      DB 9;
89;
                                                         0
                                                                                   Length 556;
                                                         Indels
                                                         0
                                                         Gaps
                                                         0
```

Search completed: November 13, 2003, 10:59:31
Job time: 2025 secs

```
Command line parameters:

-MODEL-frame+ p2n model -DEV=xlh
-Q-/Cgn2_1/USPTO_spool/US10081935/runat_12112003_144406_3612/app_query.fasta_1.199
-D=N_Geneseq_19Jun03 -QFMT=fastap -SUFFIX=rrng -MINMATCH=0.1 -LOOPCL=0
-LOOPEXT=0 -UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100 -THR_MIN=0 -ALIGN=40
-MODE=LOCAL -OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-USER=US10081935 @GGN_1_1_0 @runat 12112003 144406_3612 -NCPU=6 -ICPU=3
-NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG
-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6
-FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N_Geneseq_19Jun03:*

1: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1980.DAT:*

2: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1981.DAT:*

3: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1982.DAT:*

4: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*

5: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1985.DAT:*

6: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1985.DAT:*

7: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1985.DAT:*

9: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1987.DAT:*

9: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1987.DAT:*

9: /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1987.DAT:*
                    US-10-081-935-2
82
1 MQFSHALIALVAAGLASA 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  November 13, 2003, 10:59:37; Search time 218 Seconds (without alignments) 222.889 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2552756 segs, 1349719017 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA199.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7.0
7.0
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed,

and is derived by analysis of the total score distribution

## SUMMARIES

XXXXXXX	X E S	ž I	X A S	RESU ABN2 ID		ი	a	იი	O	იი	n	ი ი	ז	a c	ם מ	ი ი	იი	O.	റ റ	,		ი	a	a						(	იი	a			(		Re s
Hum hypo deg carc hypo immu auto	Hu	24	ABI	LT 084 AB		45	44	4 4 2 U	41	4 4	38	37	2 Z	34	מ ני	31	30	28	27	25	24	22	21	19	17	16	, ,, ,,	13	1,11	10	φ @	7	თ ს	4.1	w ı		Sult No.
an; operprolement of the contract of the contr	Human ORFX	-JUN-200	ABN20845;	20845 8		42	42	4 4 2 2	42	4 4	42	42	4 2	42	4 4 2 2	42	4 4	42	4 4 2 2	43	4 4 W W	43	4 4 U U	4.	4. 4 	43	4.4	44	4 4 4 4		4 4 4 4		4 4		47	50	Score
pen reading liferative disord cular disescular disescular disescular disescular disescular disescular disescular disorder	ројупис	2 (fir		tandard					-		٠.	-:	- :-	۲:	51.2	μ:		:		· N		2		2	N.	2 :	o Ņ	ω.	53.7	ω.	. u	w	ი :	<b>,</b> 7	.7 :	7.	Query Match
fr dis dis er; ase hyr imm	leoti	st ent		l; cdna;		2211	2211	2027	2003	1874	1776	1776	1569	1474	1201	1031	981 951	806	504 504	4376	349980	5660	$\frac{111}{122}$	003	1758	1554	549	10091	4754	4751	1844	175	10323	4411529	40376	450	Length
O COGETT	de sec	ry)		450		21	15	24	24	2 4	15	D 4	23	24	24	24	2 2	23	24	21	21	21	23	25	23	25	22	19	2 2	23	2 22	23	24	,		J NJ	DB.
RFX; gene therapy; cance psoriasis; benign tumou arthritis; neurodegenera ete mellitus; systemic; cholesterol ester stor sorder; infectious disea old arthritis; autoimmun	guence SEQ ID NO:10167.			BP.	ALIGNMENTS	AAA95409	AAQ58012	ABQ79595 ABQ7959A	ABQ79596	ABQ79594 ABQ79597	AAQ58018	AAO58017	ABL02695	ABQ79602	ABQ79607	ABQ79606	ABQ79615	AAS85360	AAH53816 ABN91496	AAA81490	AAF21609 AAF21610	AAA81459	ABL50562 AAS87868	ABZ66813	AAS90583 ABI.03546	ABZ66799	AAC94394	AAV69642	ABL17908	ABL17906	ABL17907 ABL17909	ABL12109	AAS89289 ABI99479	AAI 99682	AAI 9968	ABN20845	ID
<pre>x; cirrhosis; x; haemorrhage; tive disorder; tupus erythematosus; age disease; se; se;</pre>						richod	equenco	. reesei cbhl g	. rees	. reesei chhl c	equenc	. reesei coni ge equence of alter	rosophila melano	. rees	i cbhl ge	rees	z .	7. 0	S. epidermidis ope	7 1	Neisseria meningit Neisseria meningit	N. meningitidis pa	Micromonospora car	Orthosomycin biosy	encoding nove	hosomycin bios	fleah	sophila	sophila	ophila	שוע	ophila	encod:	obacterium tub	Mycobacterium tube	uman ORFX poly	otion

```
RESULT 2
AAS59592/c
                                                                                                       밁
                                                                                                                                       ફ
SX S
                                                                                                                                                                           US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                        CC (referred to as open reading frame, ORFX, where X is 1-11491 (see Table 1 in the specification). ABN15762 to ABN27252 encode the human DRFX CC in the specification). ABN15762 to ABN27252 encode the human ORFX CC proteins given in ABP00010 to ABN15762 to ABN27252 encode the human ORFX CC proteins given in ABP00010 to ABN1500. ORFX proteins are useful for treating or preventing a pathology associated with an ORFX-associated CC disorder in humans, and in the manufacture of a medicament for treating a CC syndrome associated with ORFX-associated disorders, Cirrhosis of liver, CC psoriasis, benign tumours, keloid, degenerative disorders, haemorrhage, CC treatment of cancer, hyperproliferative disorders, related to organ transplantation, cardiovascular diseases, diabetes mellitus, systemic CC transplantation, cardiovascular diseases, diabetes mellitus, systemic CC pubus erythematosus hypertension, hypothyroidism, cholesterol ester storage disease, various immune deficiencies and disorders, infectious CC disease, autoimmune thyroiditis, myasthenia gravis, graft-versus-host CC disease, autoimmune thyroiditis, myasthenia gravis, graft-versus-host CC disease, autoimmune thispandatory eye disease. ORFX proteins are also useful for treating burns, incisions, ulcers, for treating osteoporosis, CC considered to disorders, or periodontal disease, and for gut proteins and autoimmune and treatment of lung or liver fibrosis. CC systemic Cytokine damage.

CC N.B. The segment of damage.
                                                                                                                                                                                                                                                                                                      No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel human polypeptides and polynucleotides useful for diagnosing, preventing and treating cardiovascular disease, neurodegenerative, hyperproliferative disorders and autoimmune disorders .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-MAY-2000;
29-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-DEC-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
AAS59592
                                AAS59592 standard; DNA; 5888 BP
                                                                                                                                                                                                                                                                                                                                                           Sequence 450
                                                                                                                                                                                                                                                                                                                                                                                                            N.B. The sequence data for this patent did not form specification, but was obtained in electronic format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; SEQ ID 10167; 1037pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shimkets RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29-MAY-2001; 2001WO-US10836.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200192523-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      myasthenia gravis; gene;
                                                                                                                                                                                                                                                                                                                                                                                           ttp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2002-106308/14.
                                                                                                       146
                                                                                                                                       6
                                                                                                     GCTCTCATTGCCCTGGTGGCTGGCTGGCCTTCA 181
                                                                                                                            AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                            ВP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-206132P.
2000US-228716P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Leach MD;
                                                                                                                                                                                                                                                                                                                                                           86 A; 106 C; 123 G; 133 T;
                                                                                                                                                                           x ABN20845
                                                                                                                                                                                                                            3.54
50.00
100.00$
100.00$
60.98$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                           (1-450)
                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                              Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                           N
                                                                                                                                                                                                           12
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                            part of the printed directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (see Table 1
```

```
Alignment S
Pred. No.:
                                 Ş
                                                                                                                 Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                   US-10-081-935-2 (1-18)
                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                           CC Propionibacterium acnes immunogenic polypeptides. The proteins and their CC associated DNA sequences are used in the treatment, prevention and CC diagnosis of medical conditions caused by P. acnes. The disorders include CC SAPHO syndrome (synovitis, acne, pustulosis, hypertosis and infections of bone, joints and the central nervous system, however it is particularly involved in the inflammatory lesions associated with acne in a CC pattent comprises contacting a sample with a binding agent that binds to the proteins of the invention and determining the amount of bound protein CC in the sample. The polypeptides may be used as antigens in the production CC in the sample. The polypeptides may be used as antigens in the production CC in the sample to downregulate expression and activity of P. acnes polypeptides and therefore treat P. acnes infections. The antibodies may also be used as CC diagnostic agents for determining P. acnes presence, for example, by cenzyme linked immunosorbent assay (ELISA). This sequence encodes the CC Note: The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis; uveitis; endophthalmitis; bone; joint; central nervous system; ELISA; inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequences AAS59506-AAS59804 represent DNA molecules encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; SEQ ID No 87; 1069pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Propionibacterium acnes polypeptides and nucleic acids useful for vaccinating against and diagnosing infections, especially useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Skeiky YAW, Persing DH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-APR-2000;
02-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-APR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dermatological; osteopathic; neuroprotectant; ds.
                                                                                                                                                                                                                                                            at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                             Note: The sequence data for this patent did not form specification, but was obtained in electronic format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-616774/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L'maisonneuve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200181581-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Propionibacterium acnes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Propionibacterium acnes immunogenic protein encoding DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CORI-) CORIXA CORP
acne vulgaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; 2000US-199047P.
; 2000US-208841P.
; 2000US-216747P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-US12865.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ç
                                                                                                                                                                                                                                B₽;
                                                                x AAS59592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhang
                                                                                                                                                                                                                                1410 A;
                                                                                                298
47.00
100.00$
91.67$
57.32$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ,≺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mitcham JL, Wang S
, Jen S, Carter D;
                                                                                                                                                                                                                                1863 C;
                                                                (1-5888)
                                                                                                Gaps:
                                                                                                                                                                                                                                1543 G;
                                                                                                                Mismatches:
Indels:
                                                                                                                                              Matches:
Conservative:
                                                                                                                                                                              Length:
                                                                                                                                                                                                                                1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SS,
                                                                                                                                                                                                                              T; 1 other
                                                                                               5888
11
0
0
                                                                                                                                                                                                                                                                             part of the printed directly from WIPO
```

밁

5020

```
ARESULT 3
ANI 1963
ID ANII 15 ---
XX ANIX
XX ANIX
XX ANIX
XX ANIX
XX Myc.
XX Myc.
XX Myc.
XX Myc.
XX ANIX
XX ANIX
XX Myc.
XX ANIX
XX A
                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
RESULT 4
AAI99682
ID AAI9
XX
AC AAI9
XX
AC AAI9
                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18) x AAI99683 (1-4403765)
                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mycobacterium tuberculosis strain H37Rv genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAI99683 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mycobacterium tuberculosis; strain H37Rv; strain CDC 1551; genome variation; epidemiology; patient treatment; epidemic monitoring;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAI99683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US6294328-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to evaluating strain variation within and between different populations of the tuberculosis bacterial pathogen, Mycobacterium tuberculosis or related Mycobacterium by determining the nucleotide sequence of the first strain at positions in the complete sequence of the genome that correspond to positions that differ in the sequences of M. tuberculosis strains CDC 1551 (AAI99683) and nucleotide sequences of M. tuberculosis strains CDC 1551 (Fig. 1) and HJRV (AAI99682). The method is useful for evaluating strain variation of M. tuberculosis and has valuable application in the fields of tuberculosis genetics, epidemiology, patient treatment and epidemic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Evaluating strain variation of Mycobacterium tuberculosis, comprises determining the nucleotide sequence of the strain at positions in the genome corresponding to positions where M. tuberculosis strains CDC 1551 and H37Rv differ -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-647261/74.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fleischmann RD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 4; SEQ ID NO 2; 3pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GENO-) INST GENOMIC RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4403765 BP; 757105 A; 1447799 C; 1441301 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO at seqdata.uspto.gov/sequence.html?DocID=6294328B1.
15-JAN-2002
                                                        AAI99682;
                                                                                                           AAI99682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No . .
                                                                                                                                                                                                                  1218600 TTCGCGCACGCCTGGTGTCGATCGTTGCCGCTGAATTGGCG 1218641
                                                                                                                                                                                                                                                                        w
                                                                                                                                                                                                                                                    pheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla
|||:::|||||||||::::::::||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0103840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0103840
        (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              White OR,
                                                                                                                                                                                                                                                                                                                                                                                      8.89e+05
47.00
92.86%
64.29%
57.32%
                                                                                                                 DNA;
        entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4403765
                                                                                                                    4411529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fraser CM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Venter JC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                  001
                                                                                                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       757371 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         189 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of.
```

```
Mycobacterium tuberculosis; strain H37Rv; strain CDC 1551; variation; epidemiology; patient treatment; epidemic monito
                                                                                                                                                                                                          Mycobacterium tuberculosis strain H37Rv genome SEQ ID
                                                                                                               Mycobacterium
24-JUN-1998;
                                   25-SEP-2001
                                                                           US6294328-B1
                                                                                                                   tuberculosis.
   98US-0103840
                                                                                                                                                                  monitoring; ds.
                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                    genome;
```

WPI; 2001-647261/74. Fleischmann RD, (GENO-) INST GENOMIC RES 24-JUN-1998; 98US-0103840 White OR, Fraser CM, Venter

Evaluating strain variation of Mycobacterium tuberculosis, comprises determining the nucleotide sequence of the strain at positions in the genome corresponding to positions where M. tuberculosis strains CDC 1551 and H37Rv differ -Claim 3; SEQ ID NO 1; 3pp + Sequence Listing; English. the

The invention relates to evaluating strain variation within and between different populations of the tuberculosis bacterial pathogen, Mycobacterium tuberculosis or related Mycobacterium by determining the nucleotide sequence of the first strain at positions in the complete sequence of the genome that correspond to positions that differ in the nucleotide sequences of M. tuberculosis strains CDC 1551 (AA199683) and HJRV (AA199682). The method is useful for evaluating strain variation of M. tuberculosis and has valuable application in the fields of tuberculosis genetics, epidemiology, patient treatment and epidemic monitoring. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO at sequence.html?DocID=6294328B1. ō,

Sequence 4411529 BP; 758565 A; 1449983 C; 1444602 ဂ္ 758379 T; 0 other;

Percent Similarity:
Best Local Similarity:
Query Match:
DB: Alignment Scores: 8.9e+05 47.00 92.86% 64.29% 57.32% Length: Matches: Conservative: Mismatches: Indels:

밁 S 1219072 w PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla |||:::||||||||:::::::::||||||||| TTCGCGCACGCCTGGTGTCGATCGTTGCCGCTGAATTGGCG 1219113

US-10-081-935-2 (1-18) x AAI99682

(1-4411529)

RESULT 5 SXXXXXXXXXXXXX DNA encoding novel human diagnostic protein #20093 13-FEB-2002 AAS84289 standard; (first entry) CDNA; 7788 ВP

Human; chromosome mapping; gene mapping; gene therapy; forensic food supplement; medical imaging; diagnostic; genetic disorder; Homo sapiens forensic; 88

Percent Similarity: Best Local Similarity:

1947 10

Sequence 1947 Bp;

The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from

547 A; 520 C; 485 G; 395 T; 0

MIPO

xxx555555555555xxx

The invention relates to an isolated nucleic acid detection reagent useful in developmental biology and in elucidating cell signalling insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL01840-ABL16175) and the encoded proteins. The invention features are the sequences (ABL01840-ABL16175) and the encoded proteins.

8

Claim 1; SEQ ID NO 5200; 21pp + Sequence Listing; English.

Query Match:

```
The invention relates to an isolated nucleic acid detection reagent useful in developmental biology and in elucidating Call Signalling interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention liscloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA
                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 5191; 21pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
                                                                                                                                                         New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
₹$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x ABL17909
                                                                                                                                                                                            WPI; 2001-656860/75.
                                                                                                                                                                                                                                                     23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                      (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                     WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                   Drosophila; developmental biology; pharmaceutical; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster genomic polynucleotide SEQ ID NO 5191.
                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABL17906;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABL17906 standard; DNA; 4751 BP.
                                                                                                                                                                                                                       JС,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          986 GCACATGCCGCCATTGCCCCTTGTACTTGCAGGCCAAGCCAACGCC 942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                           Li PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280
44.00
80.00%
66.67%
53.66%
23
                                                                                                                                      detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                       Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1-1947)
                                                                                                                                                                                                                                                                                                                                                          cell signalling; insecticide;
                                                                                                                                                                                                       EΨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                               3 1000 or more
3 and cell-cell
```

Mouse; ischaemia; כטייייביב.

```
Sequence 4754 BP; 1313 A; 1004 C; 980 G; 1457
                                 The invention relates to an isolated nucleic acid detection reagent useful in developmental biology and in elucidating cell interactions in higher eukaryotes for the development discloses genomic DNA sequences (ABL01840-ABL16175) and the encoded proteins

(ABBS7737-ABB72072).
      The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format of the printed at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                      Claim 1; SEQ ID NO 5197; 21pp + Sequence Listing; English.
                                                                                                                                                                 New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-2 (1-18) x ABL17906 (1-4751)
                                                                                                                                                                 interactions
                                                                                                                                                                                                 WPI; 2001-656860/75.
                                                                                                                                                                                                                                                           23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
                                                                                                                                                                                                                                     (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                             23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                           Drosophila; developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster genomic polynucleotide SEQ ID NO 5197.
                                                                                                                                                                                                                                                                                                                                                                                                          26-MAR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                          ABL17908 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4751 BP; 1313 A; 1002 C; 980 G; 1456 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The sequence data for this patent did not form part of the printed at ftp.wipo.int/pub/published pot sequences format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2107 GCACATGCCGCCATTGCCCCTTGTACTTGCAGGCCAAGCCAAGCCC 2151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adams M,
                                                                                                                                                                                                                                                    2000US-191637P.
2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     833
44.00
80.00%
66.67%
53.66%
23
                                                                                                                                           detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                              , DMd
                                                                                                                                                                                                                                                                                                                                                                                                                                       4754
                                                                                                                                                                                                           Myers
                                                                                                                                                                                                          EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:
                WIPO
                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OdIM
```

```
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x ABL17908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                      Best Local Si
Query Match:
DB:
                                             Percent Similarity:
Best Local Similarity:
                                                                                Alignment Scores: Pred. No.:
US-10-081-935-2 (1-18)
                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster expressed polynucleotide SEQ ID NO 30806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABL12108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABL12108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pharmaceutical; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila;
                                                                                                                                                                                  capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511) expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster.
                                                                                                                                                                                                                                                                                Claim 1; SEQ ID NO 30806; 21pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                 New isolated nucleic acid
genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                         Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                (PEKE ) PE CORP NY
                                                                                                                                                                                                                                                          The invention relates to an isolated nucleic acid detection reagent
                                                                                                                                                                                                                                                                                                                                                      P-PSDB; ABB68005.
                                                                                                                Sequence 4790 BP; 1324 A; 1012 C; 986 G; 1468 T; 0 other;
                                                                                                                                                   specification,
                                                                                                                                                                           (ABB57737-ABB72072)
                                                                                                                                   sequence data for this patent did not form part or scification, but was obtained in electronic format ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard; cDNA; 4790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              developmental biology; cell signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                           Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  833
44.00
80.00%
66.67%
53.66%
 x ABL12108
                       841
44.00
80.00%
66.67%
53.66%
23
                                                                                                                                                                                                                                                                                                                                                                                            Ľ.
                                                                                                                                                                                                                                                                                                                                                                                            , DWG
                                                                                                                                                                                                                                                                                                                      detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-4754)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
  (1-4790)
                                                                                                                                                                                                                                                                                                                                                                                            Myers EW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
                                    Conservative: Mismatches: Indels:
                                                                      Matches:
                         Gaps:
                                                                                                                                                       part of the printed
format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4754
10
.2
.3
0
                         4790
10
2
3
0
                                                                                                                                                                                                                                                                                       English.
                                                                                                                                                           WIPO
                                                                                                                                                                                                                                                      18
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
AAC94394
ID AAC9
XX
                                                                                   á
                                     RESULT 14
                                                              밁
                                                                                                             US-10-081-935-2 (1-18)
                                                                                                                                                Query Match:
                                                                                                                                                            Best Local Similarity:
                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Non-recombining region; human; Y chromosome; X homologue; testis; infertility; sperm; Drosophila fat facets related Y; inhibitor; gene alteration; DFFRY; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAV69642 standard; DNA; 10091 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila fat facets related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAV69642;
                                                                                                                                                                                                                                                           Y (DFFRK) gene. The invention relates to genes occurring on the non-recombining region of the human Y chromosome. The sequences fall into two classes: (1) X-homologus DNA which are expressed in many organs, having functional X homologues and (2) testis-specific DNA sequences. Y chromosomal DNA from males with known conditions such as sequences. Y chromosomal DNA from males with known conditions such as infertility and reduced sperm count can be assessed using the invention determine whether the condition is associated with or caused by the occurrence of the gene or gene alteration. Candidate inhibitors of the enzymatic activity of the genes can be assessed using in vitro assays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-OCT-1998.
                                                                                                                                                                                                                                                                                                                                                                           This represents the nucleotide sequence of Drosophila fat facets related
                                                                                                                                                                                                                                                                                                                                                                                                   Claim 7; Fig 7A-D; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel genes in the non-combining region diagnose if male infertility or reduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; AAW81512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lahn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (WHED ) WHITEHEAD INST BIOMEDICAL RES
                                                                                                                                                                                                                                    Sequence 10091 BP; 3208 A; 1797 C; 2103 G; 2983 T; 0 other;
             AAC94394 standard; cDNA; 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2107
                                                              3483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1998-568729/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                    ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page DC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97US-0041877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US07115
                                                                                                             x AAV69642 (1-10091)
                                                                                                                                      2.09e+03
44.00
76.47%
52.94%
53.66%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Y (DFFRY) gene
                                                                                                                                                               Matches:
Conservative:
Mismatches:
                                                                                                                                      Indels:
Gaps:
                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                          or y chromosome -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence
                                                                                                                                       10091
9
4
4
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2151
                                                                                                                                                                                                                                                                                                                                                                                                                                               useful to
genetic
```

```
Percent Similarity:
Best Local Similarity:
                ঠ
                                                                  US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                           CC constructs, recombinant virtues and recombinant cells comparising the control of the proteins, a method of identifying inhibitors of the proteins, a method of identifying inhibitors of the proteins, and compositions comprising the inhibitors for the proteins, and compositions comprising the inhibitors of control of the proteins and compositions comprising the inhibitors of the proteins and compositions comprising the inhibitors of control of the proteins they concode may be used in the prevention, treatment and diagnosis of diseases considered with flea infestations. For example, the nucleic acids may be used to produce an HMT or HNC protein according to standard recombinant control of the cell to express the protein and HNC nucleic acids may be used as DNA probes in diagnostic assays (e.g., PCR) to detect conditions and the proteins and their role in metabolism. The HMT and HMT and HMC control of the proteins and their role in metabolism. The HMT and HMT control of the proteins and their role in metabolism. The HMT and HMC control of the proteins and their role in metabolism. The HMT and HMC control of the proteins and their role in metabolism. The HMT and HMC control of the protein assays to identify modulators (agonists and control of the protein antibodies and antagonists may also be used to downregulate protein expression and activity. The antibodies may also be used to control of the protein expression and activity. The antibodies may also be used to control of the protein expression and activity. The protein expression and activity. The antibodies may also be used to control of the protein expression and activity. The protein expression and activity. The application expression and activity. The protein expression and activity and the protein expression and activity. The protein expression and activity and the protein expression and activity and the protein expression and activity. The protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cat flea; head and nerve cord nucleic acid; HNC; flea infestation; vaccine; antiparasitic; therapeutic target; diagnosis; detection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to novel cat flea (Ctenocephalides felis) nucleic acids which are expressed in hindgut and Malpighian tubule (HMT) tissue or head and nerve cord (HMC) tissue. The invention also relates to the encoded proteins. The invention additionally encompasses expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Flea Malpighian tubule and head acids useful for the prevention,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200061621-A2
                                                                                                                                                                                                                                                                                          Sequence 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 26; Page 538; 964pp; English
                                                                                                                                                                                                                          No. :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           flea head and nerve cord (HNC) cDNA, SEQ ID NO:889
MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaines PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0128704
                                                                                                                                                                                                                                                                                          158
                                                                ×
                                                                                                          91.4
43.00
72.22%
50.00%
52.44%
                                                                  AAC94394
                                                                                                                                                                                                                                                                                          A; 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stinchcomb
                                                                                                                                                                                                                                                                                          ű
                                                                (1-549)
                                                                                                                                                                                                                                                                                          137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and nerve cord tissue derived nucleic , diagnosis and treatment of flea
                                                                                                                                Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n,
                                                                                                                                                                                                                                                                                          G; 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wisnewski
                                                                                                                                                                                                                                                                                          H,
                                                                                                                                                                                                                                                                                          0 other;
                                                                                                        00049549
```

밁

21

ATGAAATTCGCAGTAGCAATTTTGGGCCTGGCCCTGTGTGGCTTTGGCATCAGCT

Percent Similarity:
Best Local Similarity:
Query Match:
DB:

91.4 43.00 72.22% 50.00% 52.44% 21

Matches: Conservative: Mismatches:

Indels: Gaps:

No.:

158 A; 126 C;

G; 128

7; 0

```
RESULT 15
AAC95143
               The invention relates to novel cat flea (Ctenocephalides felis) nucleic CC acids which are expressed in hindgut and Malpighian tubule (HMT) tissue CC or head and nerve cord (HNC) tissue. The invention also relates to the CC encoded proteins. The invention additionally encompasses expression CC constructs, recombinant viruses and recombinant cells comprising the nucleic acids of the invention, recombinant production of the proteins, and compositions comprising the inhibitors for CC antibodies against the proteins, a method of identifying inhibitors of CC administration to an animal. The nucleic acids, and the proteins they CC encode may be used in the prevention, treatment and diagnosis of diseases CC encode may be used in the prevention. Treatment and diagnosis of diseases CC used to produce an HMT or HNC protein according to standard recombinant CC DNA methodology by inserting the nucleic acids into a host cell and CC culturing the cell to express the protein. The HMT and HNC nucleic acids CC may also be used as DNA probes in diagnostic assays (e.g., PCR) to detect and quantitate the presence of cat flea or other homologous nucleic acid squences in samples. They may also be used to study the expression and CC function of the proteins and their role in metabolism. The HMT and HNC protein may be used as antigens in the production of specific contibodies, and in assays to identify modulators (agonists and CC antibodies, and in assays to identify modulators (agonists and CC antibodies, and in assays to identify modulators (agonists and CC antibodies, and in assays to identify. The antibodies may also be used to samples (e.g., by enzyme linked immunosorbent assay (ELISA)). The college may also be resent sequence represents a cat flea HNC CDNA of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 26; Page 793; 964pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Flea Malpighian tubule and head and nerve cord tissue derived nucleic acids useful for the prevention, diagnosis and treatment of flea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-656323/63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ctenocephalides felis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cat flea; head and nerve cord nucleic acid; HNC; flea infestation; vaccine; antiparasitic; therapeutic target; diagnosis; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brandt KS, Gaines PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-APR-2000; 2000WO-US09437.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200061621-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cat flea head and nerve cord (HNC) cDNA, SEQ ID NO:1638.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAC95143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC95143 standard; cDNA; 549 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HESK-) HESKA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0128704
, by enzyme linked immunosorbent assay represents a cat flea HNC cDNA of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stinchcomb DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wisnewski
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-2 (1-18) x AAC95143 (1-549)
B
                        ş
                                                      US-10-081-935-2 (1-18)
                                                                                                              Percent Similarity:
Best Local Similarity:
                                                                                                                                                                       Alignment Scores
                                                                                                                                            Score:
                                                                                                                                                                                                                                      The invention relates to identifying orthosomycin biosynthetic genes and its fragment/gene cluster (ABZ66670-ABZ666813), comprising detecting the presence of a nucleic acid sequence coding for a polypeptide (ABP99207-ABP99362). The method is useful for identifying an orthosomycin biosynthetic gene, gene fragment or gene cluster, especially an everninomicin-type or avilamycin-type orthosomycin biosynthetic gene, gene fragment or gene cluster. The method is useful for detecting the presence of any organism that contains DNA for the production of orthosomycins (both everninomicin-type orthosomycins and avilamycin-type orthosomycins) broduced by the organism or the amount of orthosomycin production are expressed by the organism or the amount of orthosomycin produced by the organism. This allows for the detection of new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Orthosomycin biosynthetic polynucleotide SEQ ID NO 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Orthosomycin; biosynthesis; everninomicin; avilamycin; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABZ66799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAR-2001; 2001US-279095P.
30-MAR-2001; 2001US-279709P.
20-APR-2001; 2001US-285214P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Micromonospora carbonacea africana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABZ66799 standard; DNA; 1554 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Identifying orthosomycin biosynthetic gene, gen cluster, by detecting presence of nucleic acid to 17 of flambamycins protein families -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-MAR-2002; 2002WO-CA00432.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-OCT-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200279505-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 409; 511pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-058435/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Farnet CM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ECOP-)
                                                                                                                                                                                                  Sequence 1554
                                                                                                                                                                                                                             orthosomycin natural products, not produced by the organism
                                                                                                                                                         0
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ECOPIA BIOSCIENCES INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABP99336
                      MetGlnPheSerHisAlaLeuIleAla-----
ATGAGACATCGTCATGCCCTGCTGGCCGTCGGCACCACCGCGACCCTGGTCGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zazopoulos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                    BP; 267 A; 615 C; 474 G; 198 T; 0 other;
                                                         ×
                                                                                     326
43.00
63.64*
54.55*
52.44*
                                                         ABZ66799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Staffa A;
                                                          (1-1554)
                                                                                                                             Length:
Matches:
Conservative:
                                                                                                     Indels:
                                                                                                                  Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene fragment or gene
cid sequence corresponding
                -----LeuValAlaAlaGly 14
                                                                                     1554
12
2
2
6
      60
```

```
RESULT 17
RABSULT 17
AAS90583
ID AAS90583
XX AAS90
XX AAS90
XX DNA 6
XX Human
XX Homo

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                               CC polypeptide (II) sequences. (I) is useful as hybridisation probes.

CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome complete that reaction (PCR) primers of the polymerase chain reaction of (II). The complete are also used in diagnostics as expressed sequence tags complying to restore normal activity of (II) is useful in gene therapy techniques complete the respective or complete the respective of (II) or to treat disease states involving companies. (I) is useful for generating antibodies against it, detecting or complete the respective of (II) or to treat disease states involving or complete the respective or complete the respective or the sequence of supplement. (II) and (II) and (II) are useful in medical complete for septement protein expression or biological activity. Complete the polypeptide and polypucleotide sequences have applications in complete the respective polypeptide and polypucleotide sequences have applications in compositive for genetic disorders or other traits to assess biodiversity cannot be produce other types of data and products dependent on DNA and compositive coding sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed compositic coding sequences of the invention.

CC at ftp.wipo.int/pub/published_pct_sequences.
                                                                                      Best Local Similarity:
                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                         Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAS90583 standard; cDNA; 1758 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding novel human diagnostic protein #26387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutation of motation of motati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-639362/73
P-PSDB; ABG26396.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31-MAR-2000;
23-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; SEQ ID No 26387; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                Sequence 1758
                                                                                                                                                                                                                     NO.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            supplement;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15 LeuAla 16
||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 CTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chromosome mapping;
upplement; medical in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         χŢ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-0540217.
2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                    B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                    653 A;
379
43.00
80.00%
53.33%
52.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          imaging;
                                                                                                                                                                                                                                                                                                                                                         368 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene mapping; gene therapy; forensic;
maging; diagnostic; genetic disorder; ss.
                                                                                                                                                                                                                                                                                                                                                             391
                                                                                                                               Length:
Matches:
Conservative:
                                                 Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                             ဂ္
                                                                                                                                                                                                                                                                                                                                                             346
                                                                                                                                                                                                                                                                                                                                                             Η.
                                                                                                                                                                                                                                                                                                                                                             0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mutations
```

Query Match: DB:

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 18
ABL03546
                                                ઇ
                                                                                                                                                                                                                   ş
                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-2 (1-18) x AAS90583 (1-1758)
                                                                            US-10-081-935-2 (1-18) x ABL03546 (1-6783)
                                                                                                                                                                                       Alignment
RESULT 19
                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL6176-ABL30511), expressed DNA sequences (ABL6175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila; developmental biology; cell signalling; insecticide; pharmaceutical; gene; ss.
                                                                                                                                                                                                                Sequence 6783 BP;
                                                                                                                                                                                                                                                      The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 5120; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-MAR-2000; 2000US-191637P.
11-JUL-2000; 2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster expressed polynucleotide SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Venter JC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-SEP-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABL03546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABL03546 standard; cDNA; 6783
                                                                                                                                                                                                                                                                                                                                                                                                                                      interactions
                                                                                                                                                                            Хо
:
                                                                                                                                                                                                                                                                                     (ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PEKE ) PE
                                                                                                                                                                                                                                          ftp.wipo.int/pub/published_pct_sequences.
                        5989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     416 TACCAGCATTTATTATTAAGTTTAGTGAGGGCAGGGGTAGCCTCC
                                                  w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABB59443.
                      TTTTCGAATCTTCTATTAACACTACTTGTCGCAGGATTGGCTTCT 6033
                                      PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORP NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adams M,
                                                                                                                                                                                                                 2354 A; 1063 C; 1140 G; 2226
                                                                                                     80.00%
60.00%
52.44%
23
                                                                                                                                                           1.98e+03
43.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Myers
                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E
                                                                                                                                                                                                                 T; 0 other;
                                                                                                     6783
9
3
3
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO 5120
                                                                                                                                                                                                                                                        WIPO
                                                                                                                                                                                                                                                                                                                                                                    S
```

```
ABZ66813/c

ABZ66813 standard; DNA; 10035 BP.

XX

AC ABZ66813;

XX

AC ABZ66813;

XX

DT 21-MAR-2003 (first entry)

XX

Orthosomycin biosynthetic gene clus

XX

Orthosomycin; biosynthesis; evernin

XX

Micromonospora carbonacea aurantiac

XX

MO200279505-A2.

XX

10-OCT-2002;

YX

28-MAR-2001; 2001US-279709P.

PR 20-MAR-2001; 2001US-279709P.

PR 20-MAR-2001; 2001US-279709P.

PR 20-APR-2001; 2001US-279709P.

PR 20-APR-2001; 2001US-279709P.

PR 20-APR-2001; 2001US-279709P.

XX

(ECOP-) ECOPIA BIOSCIENCES INC.

XX

Farnet CM, Zazopoulos E, Staffa /

XX

(ECOP-) ECOPIA BIOSCIENCES INC.

XX

PT Identifying orthosomycin biosynther

Cluster, by detecting presence of rollster.

XX

PT Identifying orthosomycin biosynther

Cluster, by detecting presence of rollster.

XX

PT Identifying orthosomycin biosynther

CC 17 of flambamycins protein family

XX

PT Identifying orthosomycin biosynther

CC 17 of flambamycins protein family

XX

CC The invention relates to identify:

CC the presence of a nucleic acid seg

CC (ABP99207-ABP99362). The method is

CC the presence of any organism that cont

CC cyerninomicin-type or avilamycin-to

GC (ABP99207-ABP99362). The method is

CC biosynthetic gene, gene fragment o

everninomicin-type or avilamycin-to

gene fragment or gene cluster. The

CC cyen fragment or gene cluster. The

CC produced by the organism that cont

CC orthosomycins (both everninomicin-

CC orthosomycins) regardless of the 1

CC produced by the organism. This all

CC orthosomycin natural products, not

XX

Sequence 10035 BP; 1396 A; 3516 C;
ABL50562/c
ID ABL505
XX
                                                                                                                                                                                                                                                                                                                                                                                                                      Query
DB:
                                                                                                                                         밁
                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-2 (1-18) x ABZ66813 (1-10035)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to identifying orthosomycin biosynthetic genes and its fragment/gene cluster (ABZ66670-ABZ666813), comprising detecting the presence of a nucleic acid sequence coding for a polypeptide (ABP99207-ABP99362). The method is useful for identifying an orthosomycin biosynthetic gene, gene fragment or gene cluster, especially an everninomicin-type or avilamycin-type orthosomycin biosynthetic gene, gene fragment or gene cluster. The method is useful for detecting the presence of any organism that contains DNA for the production of orthosomycins (both everninomicin-type orthosomycins and avilamycin-type orthosomycins) regardless of the level at which genes for orthosomycin production are expressed by the organism or the amount of orthosomycin produced by the organism. This allows for the detection of new orthosomycin natural products, not produced by the organism.
                          ABL50562 standard; DNA; 11115 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 10035 BP; 1396 A; 3516 C; 3657 G; 1466 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Identifying orthosomycin biosynthetic gene, gene fragment cluster, by detecting presence of nucleic acid sequence of to 17 of flambamycins protein families -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Orthosomycin biosynthetic gene cluster SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 506-511; 511pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Micromonospora carbonacea aurantiaca
                                                                                                                                                                                                                                                  7811
                                                                                                                                      7751
                                                                                                                                                                                           15 LeuAla 16
                                                                                                                                                                                                                                                                          1 MetGlnPheSerHisAlaLeuIleAla--------LeuValAlaAlaGly 14
                                                                                                                                                                                                                                            CTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            biosynthesis; everninomicin;
                                                                                                                                                                                                                                                                                                                                                                                                                3.19e+03
43.00
63.64%
54.55%
52.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               avilamycin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10035
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    282.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               corresponding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sb
```

```
RESULT 21
AAS87868
                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                              á
                                                                                                                                                                            В
                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x ABL50562 (1-11115)
                                                                                                                                                                                                                                                                                                                                                                                                                             ABL50555 to ABL50562 represent contigs 1 to 8 from the Micromonospora carbonacea everninomicin biosynthetic locus gene cluster. The contigs encode the protein sequences designated ORF (open reading frame) 1 to 49, given in ABB06881 to ABB06930. The gene cluster is useful for the construction of the everninomicin antibiotic in overproducing strains, and to allow chemical modifications of everninomicin to enhance certain properties via genetic manipulation or combinational biosynthesis. The gene cluster can be used to produce genetic systems and genes encoding novel enzyme activities, and avoid the problems of low yield and quality
 13-FEB-2002
                             AAS87868;
                                                         AAS87868
                                                                                                                                                                                                                                                                                                                                                                                         Sequence 11115 BP; 1521 A; 3924 C; 4057 G; 1613 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel isolated gene cluster encoding polypeptides involved in everninomicin biosynthesis useful for construction of everninomicin overproducing strains, and to allow chemical modifications of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Micromonospora carbonacea; antibiotic; everninomicin; biosynthesis; gene cluster; genetic manipulation; contig; gene; ds.
                                                                                                                                                                                                                                                                                                                                                Хо
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Fig 1; 181pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    overproducing everninomicin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABB06928,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-476185/51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staffa A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JAN-2001; 2001WO-CA00128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Micromonospora carbonacea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Micromonospora carbonacea everninomicin locus nucleotide contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABL50562;
                                                                                                                                                                                                                                                                                                                                                                                                                      everninomicins produced by chemical synthesis.
                                                                                                                                                                          7824 ATGAGACATCGTCATGCCCTGCTGGCCGTCGGCACCACCGCGACCCTGGTCGCCGGC
                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABB06922,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ECOPIA BIOSCIENCES INC FARNET C.
                                                         standard; cDNA; 11220 BP
                                                                                                                     CTGGCC 7759
                                                                                                                                                 LeuAla 16
                                                                                                                                                                                                         MetGlnPheSerHisAlaLeuIleAla-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABB06929, ABB06930.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zazopoulos E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0177711.
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to enhance certain properties
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB06923, ABB06924, ABB06925, ABB06926, ABB06927,
                                                                                                                                                                                                                                                                                 43.00
63.64%
54.55%
52.44%
                                                                                                                                                                                                                                                                                                                                             3.62e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mercure
                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                               Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                   Indels:
                                                                                                                                                                                                                                                                                                   Mismatches:
                                                                                                                                                                                                                                                                                                                 Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nowacki P;
                                                                                                                                                                                                                                                                     1 6 2 2 1 2
                                                                                                                                                                                          --LeuValAlaAlaGly 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
```

```
RESULT 22
AAA81459/c.
ID AAA814!
XX
                                                                                     밁
                                                                                                                                                 US-10-081-935-2 (1-18) x AAS87868
                                                                                                                                                                                                       Query Match:
                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                               CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC can dentifying expressed genes. (I) is useful in gene therapy techniques CC for identifying expressed genes. (I) is useful in gene therapy techniques CC (II). (II) is useful for generating antibodies against it, detecting or CC quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical company of sites expressing (II). (I) and (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. (C The polypeptide and polymucleotide sequences have applications in CC disgnostics, forensics, gene mapping, identification of mutations cresponsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and CC amino acid sequences AAS64197-AAS94564 represent novel human CC diagnostic coding sequences of the invention.

CC specification, but was obtained in electronic format directly from WIPO cat from wint of the intrinsity and nor resonences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity -
                                                                                                                                                                                                                                                                                                                           Sequence 11220 BP; 4082 A; 2495 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; SEQ ID No 23672; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA encoding novel human diagnostic protein #23672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; chromosome mapping; gene mapping; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                        ftp.wipo.int/pub/published_pct_sequences.
                                                                                 7210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            supplement; medical imaging; diagnostic; genetic disorder; ss
                                                                            80.00%
53.33%
52.44%
23
                                                                                                                                                                                                                                                      43.00
                                                                                                                                                                                                                                                                        3.66e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ĭ
                                                                                                                                                   (1-11220)
                                                                                                                                                                                                                                                      Length:
Matches:
                                                                                                                                                                                                                      Mismatches:
                                                                                                                                                                                                     Indels:
                                                                                                                                                                                                                                    Conservative:
                                                                                                                                                                                                                                                                                                                         2204 G;
                                                                                                                                                                                                                                                                                                                         2437
                                                                                                                                                                                                                                                                                                                           T; 2 other;
                                                                                                                                                                                     84400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               forensic;
```

standard; DNA; 56609 BP

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                         Alignment Scores
                                                                                                                                                                                          represent specifically claimed Neisseria meningitidis genomic DNA sequences; AAA81260 to AAA81303 and AAB25620 to AAB2563 represent Neisseria DNA sequences and their corresponding proteins; AAA81254 to AAA81259 and AAA81304 to AAA81321 represent PCR primers used in the isolation of Neisseria meningitidis DNA sequences; and AAA81322 to AAA81259 and AAA81324 to AAA81325 represent Neisseria meningitidis MenB polynucleotide ORF sequences, which are all used in the exemplification of the present invention. The nucleic acid sequences, protein sequences, and antibodies sequences, which are all used in the manufacture of a composition. The composition can be used as a medicament (or in the manufacture of a medicament) for treating, preventing or diagnosing infection due to Neisserial bacteria. For example, some of the identified proteins could be components of vaccines against Meningococcus B; against all pathogenic Neissariae. Identification of sequences from the bacterium will also facilitate production of biological probes, particularly organism specific probes. Attempts to make efficacious Meningococcus B vaccines have falled mainly due to antigen tolerance. Weningococcus B vaccines have also been tried but none have successfully overcome antigenic variability. The provision of further, complete exposed proteins that may be presumed targets for the immune system and which are not antigenically variable or at least more conserved than
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Frazer CM, n.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           antigen; vaccine; diagnosis; infection; antibacterial; identification; Meningococcus B; MenB; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAA81459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isolated nucleotide sequences of Neisseria meningitidis which can used in the diagnosis and treatment of N. meningitidis infection a other Neisserial infections, for example, N.gonorrhoea -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200022430-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Neisseria meningitidis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N. meningitidis partial DNA sequence gnm_7 SEQ ID NO:7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-318079/27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-OCT-1998;
30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention describes methods of obtaining immunogenic proteins from Neisseria genomic sequences. AAA81453 to AAA82414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 7; Page 303-320; 1760pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CHIR ) CHIRON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hickey E, Peterson J, Galeotti C, Mora M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0103794
99US-0132068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US23573
2.65e+04
43.00
92.31%
69.23%
52.44%
                                                                                                                                              14040 A; 15839
                                                                                                                                                                                  regions
                                                                       Length:
Matches:
                                                                                                                                              C; 14415
                                    Mismatches:
                                                   Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tettelin H, Venter JC;
Ratti G, Scarselli M,
                                                                                                                                              <u>ი</u>
                                                                                                                                              12313
                                                                                                                                              H
..
                                                                                                                                              2 other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scarlato V;
```

US-10-081-935-2 (1-18)

x AAA81459

(1-56609)

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
 Percent Similarity:
                                                                                                                         CC to AAF21613 monthly the control of the NMB genomic sequence, as the CC sequence was too long to go in a record on its own it was split into 8 cs sequences which overlap each other at the beginning and end of each CC sequence by 49980 bp (i.e. the last 49980 bp of AAF21544 is repeated at the beginning of AAF21607, the last 49980 bp of AAF215407 are repeated at CC the beginning of AAF21608, and so on). AAF21545 to AAF21588 encode the CC Neisseria proteins given in AAB88550 to AAF21545 to AAF21588 encode the CC Neisseria proteins given in AAB88550 to AAF21545 to AAF21588 encode the CC Neisseria proteins given in AAB88550 to AAF21586 encode the CC Neisseria invention. The NMB genome and fragments from it have CC neisserial activity, and can be used in vaccines and gene therapy. CC Neisserial activity, and can be used in vaccines and gene therapy. CC Neisserial bacteria or as a diagnostic reagent for detection the CC proteins can be used in compositions for treating or preventing infection CC due to Neisserial bacteria or as a diagnostic reagent for detecting the CC presence of Neisserial bacteria or of antibodies raised to Neisserial bacteria or as earch to identify open reading frames (ORFs) CC or coding sequences within the NMB genome. The DNA sequences provide further opportunities to find antigenic or immunogenic proteins which are more effective in vaccines than the outer membrane proteins currently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pizza M, Hio
Galeotti C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-1999;
08-OCT-1999;
                                                                                 Sequence 349980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 7; Appendix A; 692pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Neisseria meningitidis B full length frames are used to detect, treat and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-647603/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-MAR-2000; 2000WO-US05928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Neisseria meningitidis; Neisseria gonorrheae; immunogenic; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Neisseria meningitidis B nucleotide sequence SEQ ID NO:110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAF21609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAF21609 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Neisseria meningitidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes the full length genome of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Frazer CM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-FEB-2000; 2000GB-0004695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200066791-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Neisseria meningitidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     diagnosis; antigen; detection; infection; gene therapy; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GENO-) INST GENOMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CHIR ) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hickey E, E
C, Mora M,
M, Grandi G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0132068
99WO-US23573
                                                                                 B₽;
2.4e+05
43.00
92.31%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA;
                                                                                 81351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peterson J,
Ratti G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                   B (NMB).
                                                                                 P
                                                                                 86755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , Tettelin H,
Scarselli M,
                                                                                                                                                                                                                                                                                                                                                                                                                                               The sequences in AAF21544 and AAF21607
             Matches:
 Conservative:
                                                                                 Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genome sequence and open reading prevent Neisserial infections -
                                                                               95584
                                                                               ဂ္
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scarlato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Venter JC,
Scarlato V,
                                                                                 86290
                                                                              7
                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Masignani V;
Rappuoli R;
```

```
RESULT 24
AAR21610
ID AAR21
ID AAR21610
XX AAR21
XX Neis
XX Ne
                                              CC The present invention describes the full length genome of CC Neisseria meningitidis B (NMB). The sequences in AAF21544 and AAF21607 CC to AAF21613 represent fragments of the NMB genomic sequence, as the CC sequence was too long to go in a record on its own it was split into B CC sequence which overlap each other at the beginning and end of each CC sequence by 49980 bp (i.e. the last 49980 bp of AAF21544 is repeated at the beginning of AAF21607, the last 49980 bp of AAF21547 are repeated at CC the beginning of AAF21608, and so on). AAF21545 to AAF21588 encode the CC Neisseria proteins given in AABS8550 to AAF21545 to AAF21588 encode the CC Neisseria proteins given in AABS8550 to AAF21589 to CC AAF21606 represent PCR primers which are used in the exemplification of CC the present invention. The NMB genome and fragments from it have CC neisseria nucleic acids, proteins and/or antibodies which binds to the CC proteins can be used in compositions for treating or preventing infection CC due to Neisserial bacteria or as a diagnostic reagent for detecting the presence of Neisserial bacteria or as a diagnostic reagent for detecting the CC proteins. Computers, computer memory, computer storage medium or computer CC databases can be used in a search to identify open reading frames (ORFs) or coding sequences within the NMB genome. The DNA sequences provide further opportunities to find antigenic or immunogenic proteins which are composed effective in vaccines than the outer membrane proteins currently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x AAF21609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 7; Appendix A; 692pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Neisseria meningitidis B full length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-647603/62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-OCT-1999; 99WO-US23573
28-FEB-2000; 2000GB-0004695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-MAR-2000; 2000WO-US05928.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Neisseria meningitidis; Neisseria gonorrheae; immunogenic; vaccine; diagnosis; antigen; detection; infection; gene therapy; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Neisseria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Frazer CM, Grandi G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GENO-) INST GENOMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200066791-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neisseria meningitidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAF21610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAF21610 standard; DNA; 349980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              are used to detect,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INST GENOMIC RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTTGCTCATTCTGATTGCTGCGGGTCTCGCTGCGGCT 317313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hickey E,
C, Mora M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       meningitidis B nucleotide sequence SEQ ID NO:111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0132068.
99WO-US23573.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       69
52
21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peterson J, Tettelin H,
Ratti G, Scarselli M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  treat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (1-349980)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genome sequence and open reading prevent Neisserial infections -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scarlato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Venter JC,
Scarlato V,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Masignani V;
Rappuoli R;
```

```
RESULT 25
AAA81490
        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18) x AAF21610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
The present invention describes methods of obtaining immunogenic proteins from Neisseria genomic sequences. AAA814453 to AAA82414
Crepresent specifically claimed Neisseria meningitidis genomic DNA sequences; AAA81260 to AAA81303 and AAB25200 to AAB8563 represent Neisseria DNA sequences and their corresponding proteins; AAA81254 to AAA81259 and AAA81304 to AAA81301 represent PCR primers used in the control of Neisseria meningitidis DNA sequences; AAA81322 to AAA81259 and AAA81304 to AAA81301 represent PCR primers used in the Sequences, which are all used in the exemplification of the present invention. The nucleic acid sequences, protein sequences, and antibodies against them, can be used in the manufacture of a composition. The composition can be used as a medicament (or in the manufacture of a medicament) for treating, preventing or diagnosing infection due to Neisserial bacteria. For example, some of the identified proteins could be components of vaccines against Meningcoccus B; against all serotypes, and/or against all pathogenic Neissariae. Identification of sequences from the bacterium will also facilitate production of biological probes, particularly organism-specific probes. Attempts to make efficacious
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Frazer CM, F
Masignani V,
Rappuoli R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 349980
                                                                                                                                                                                                                                                                                                                                                      Isolated nucleotide sequences of Neisseria meningitidis which can be used in the diagnosis and treatment of N. meningitidis infection and other Neisserial infections, for example, N.gonorrhoea -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-OCT-1998;
30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Neisseria meningitidis; Neisseria gonorrheae; genome; immunogenic; antigen; vaccine; diagnosis; infection; antibacterial; identification; Meningococcus B; MenB; ds.
                                                                                                                                                                                                                                                                                                                        Claim 7; Page 866-1272; 1760pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200022430-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Neisseria meningitidis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N. meningitidis B full length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAA81490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAA81490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (CHIR ) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard; DNA; 1437668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTTGCTCATTCTGATTGCTGCGGGTCTCGCTGCGGCT 17313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hickey E,
, Galeotti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0103794
99US-0132068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US23573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP; 86771 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43.00
92.31
69.23
52.44
21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2.4e+05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peterson
C, Mora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-349980)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genome DNA sequence SEQ ID NO:1068.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , X, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tettelin H, Venter JC;
Ratti G, Scarselli M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ი</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84066 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -- w
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ព្រះព្រះព្រះន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH53816/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment
       AAH52304 to AAH53970 represent nucleic acids (I) encoding polypeptides (II), given in AAG81454 to AAG83120, from Staphylococcus epidermidis. (I) and (II) can have antibacterial activity and therefore can be used in vaccination. The nucleic acids (I) may be used to produce the S. epidermidis polypeptides (II) via the production of vectors containing them which are used to produce hosts cells which express the polypeptides. The polypeptides (II) (and/or nucleic acids) may then be used to vaccinate subjects and to raise antibodies against the bacteria. The polypeptides may also be used to assay for other inhibitors of their activity and therefore identify compounds that may be used for the treatment of S. epidermidis infections, e.g. endocarditis. AAH53971 to AAH55090 represent specifically claimed S. epidermidis genomic DNA polynucleotide sequences from the present invention. AAH55091 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Meningococcus B vaccines have failed mainly due to antigen tolerance. Multivalent vaccines have also been tried but none have successfully overcome antigenic variability. The provision of further, complete sequences may provide an opportunity to identify secreted or surface exposed proteins that may be presumed targets for the immune system and which are not antigenically variable or at least more conserved than other more variable regions.
                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                       Nucleic acids encoding useful for vaccinating
                                                                                                                                                                                                                                                                                                                                                  Kimmerly WJ
                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                       09-NOV-2000; 2000WO-US30782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200134809-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Staphylococcus epidermidis vaccination; endocarditis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
თ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAH53816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH53816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1437668 BP; 344338 A; 353206 C; 385074 G;
                                                                                                                                                                                                                                                                                                                                                                              (GLAX )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1187664 GCCTTGCTCATTCTGATTGCTGCGGGTCTCGCTGCGGGT 1187702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         epidermidis
                                                                                                                                                                                                                                                                                                                   2001-316495/33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scores:
                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                      AAG82966
                                                                                                                                                                                                                                                                                                                                                                              GLAXO
 represent oligonucleotide sequences and primers
                                                                                                                                                                                                                            Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                                                            796-797;
                                                                                                                                                                                                                                                                                                                                                                              GROUP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             epidermidis SR1
ndocarditis; ds.
                                                                                                                                                                                                                                                                                                                                                                                                           9905-0164258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epidermidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      open reading frame nucleotide sequence SEQ ID NO:3025.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    x AAA81490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.21e+06
43.00
92.31%
69.23%
52.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                     polypeptides from Staphylococcus epidermidis,
                                                                                                                                                                                                                          2188pp;
                                                                                                                                                                                                                                                       against infections,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (1-1437668)
                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           strain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          infection;
                                                                                                                                                                                                                                                       e.g. endocarditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1437668
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355045 T; 5 other,
 which
are used
```

```
Pred.
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSSSSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABN91496/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment
                                ABN90538 to ABN93374 represent Staphylococcus epidermidis open reading frame (ORF) nucleic acid sequences which encode the amino acid sequences given in ABP35124 to ABP37960. The S. epidermidis sequences have antibacterial activity and can be used in gene therapy. The sequences can also be used in the diagnosis and treatment of bacterial infections, particularly S. epidermidis infections. The sequences can be used to screen for compounds able to interfere with the S. epidermidis life cycle or inhibit S. epidermidis infection.

N.B. The sequence data for this patent did not form part of the printed appecification, but was obtained in electronic format directly from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in the exemplification of the present invention.

N.B. The present invention specifically claims all the polynucle sequences given in the sequence listing of the present specification however the sequence listing only goes up to SEQ ID NO:4454 so though sequences are given in the disclosure for SEQ ID NO:4465 no sequences are present for SEQ ID NO:4455 to 4464.
                                                                                                                                                                                   Disclosure; SEQ ID 959; 267pp; English.
                                                                                                                                                                                                         Novel isolated nucleic acid encoding a Staphylococcus epidermidis polypeptide, useful for diagnosing and treating bacterial infections.
                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                 14-AUG-1997;
08-NOV-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                   30-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seguence 498
                                                                                                                                                                                                                                                                                                                                                                                         13-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                             US6380370-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABN91496;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABN91496
                                                                                                                                                                                                                                                                                                                       (GENO-) GENOME
                                                                                                                                                                                                                                                                  2002-381255/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                         site.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     epidermidis ORF nucleic acid sequence
                                                                                                                                                                                                                                                                                                                       THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                               97US-055779P
97US-064964P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      epidermidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          epidermidis; open reading frame; ORF; bacterial infection;
                                                                                                                                                                                                                                                                                                                                                                                         98US-0134001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              x AAH53816 (1-498)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
42.00
82.35%
58.82%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      504
                                                                                                                                                                                                                                                                                            O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ç
                                                                                                                                                                                                                                                                                                                       CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G; 139 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                as.
                                                                                                                                                                                                           treating bacterial infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO: 959.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 specification,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    even
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to 4472,
```

Sequence 504 BP; 188

Α; 61 C;

114 G;

141 T; 0 other;

```
RESULT 28
AASB5360/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity:
Query Match:
     CC polypeptide (II) sequences. (I) is useful as hybridisation probes, CC polyperase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC and gene mapping, and in recombinant production of (II). The CC and gene mapping, and in recombinant production of (II). The CC constant of the constant is sequence tags of or identifying expressed genes. (I) is useful in gene therapy techniques CC to restore normal activity of (II) as useful in gene therapy techniques (II). (II) is useful for generating antibodies against it, detecting or comparison of the constant is binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. (I') the polypeptide and polynucleotide sequences have applications in CC diagnostics, forensics, gene mapping, identification of mutations or responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and CC and to produce other types of data and products dependent on DNA and CC anino acid sequences. AAS64197-AAS94564 represent novel human CC diagnostic coding sequences of the invention.

CC The sequence data for this patent did not appear in the printed consecution, but was obtained in electronic format directly from WIPO cat fer, wino, inf /out/nublished not segmences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutation responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31-MAR-2000; 2000US-0540217
23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; chromosome mapping; gene mapping; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding novel human diagnostic protein #21164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAS85360 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HYSE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No.:
ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                invention relates to isolated polynucleotide (I) and
peptide (II) sequences. (I) is useful as hybridisati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-639362/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           supplement;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABG21173.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATTTTCACATTCTCTACGTCTAATCGCA-----TTGGCCTCATCT 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID No 21164; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Liu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             medical imaging; diagnostic; genetic disorder; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            x ABN91496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126
42.00
82.35%
58.82%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-504)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
10
1
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mutations
```

```
Percent Similarity:
Best Local Similari
Query Match:
                                                            Pred.
                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SΧ
                                                 Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No.:
                                                                     Alignment
                                                                                                              The invention relates to a DNA sequence located in a promoter of a secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cbh1 gene promoter. The promoters of the invention are modified such that they lack the present sequence.
                                                                                                                                                                                                                                                                                                                            Pakula T,
Jeenes D,
                                                                                                                                                                                                                                                       New DNA sequence located in a promoter of a secretable protein, useful for optimized protein production and design better fungal strains for protein production .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 806
                                                                                            Sequence 881
                                                                                                                                                                                                                                                                                                        WPI; 2002-657583/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Trichoderma reesei.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Secreted protein; transcription; secretion stress; fungal; cbhl;

 reesei cbhl gene fragment

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABQ79615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABQ79615 standard;
                                                            Хо
::
                                                                                                                                                                                                                                 Disclosure; Page 84; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                     13-FEB-2001; 2001FI-0000272
                                                                                                                                                                                                                                                                                                                                                                                                            13-FEB-2002; 2002WO-FI00116
                                                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-NOV-2002
                                                                                                                                                                                                                                                                                                                                                              (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29
15/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           317
                         Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCACCCACAGCCTGGCAGCTCTGGTGGAAGACGGTCTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ds.
                                                                                                                                                                                                                                                                                                                            Archer D,
                                                                                                                                                                                                                                                                                                                                       Saloheimo M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      187 A; 229 C;
                                                                                            256 A; 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      x AAS85360
  250
42.00
84.62$
53.85$
51.22$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225
42.00
78.57$
64.29$
51.22$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                              M, Uusitalo J,
Penttilae M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             881
                                                                                            ű
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (1-806)
                                                                                            218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       213
             Mismatches:
Indels:
                                  Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels:
                                                                                           <u>ი</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G; 177 T;
                                                                                          214
                                                                                                                                                                                                                                                                                                                                         Huuskonen
                                                                                           7;
                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       other;
                                                                                           other;
881
7
4
2
0
                                                                                                                                                                                                                                                                                                                                       ۶,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0 3 2 9 806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                                                                                                                                                                         Watson
```

US-10-081-935-2 (1-18)

×

ABQ79615 (1-881)

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 30
AAS83866/c
              Percent Similarity:
                                                                                                                                 polypeptide (11) sequences, (1) sequences, (1) polymerase chain reaction (PCR) primers, () igomers, and for chromosome conjunction of (II). The polymucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques (II). (II) is useful in gene therapy techniques (II). (II) is useful in generating antibodies against it, detecting or guantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in chairs of generating disorders involving aberrant of the traits to assess blodiversity and to produce other types of data and products dependent on DNA and CC amino acid sequences. AAS4197-AAS94544 represent novel human CC Note: The sequence data for this patent did not appear in the printed care for involving advantage of the invention.
 Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity
                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drmanac RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; chromosome mapping; gene mapping; gene therapy; forensic
food supplement; medical imaging; diagnostic; genetic disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAS83866
                                                                                                                                                                                                                                                                                                                                                                                                                           The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; SEQ ID No 19670; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; ABG19679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAS83866 standard; cDNA; 951 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-OCT-2001
                                                No.:
                                                                                                                       ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-639362/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            132
                                                                                             951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               novel human diagnostic protein #19670
                                                                                             257
42.00
82.35%
47.06%
                                                                                             A; 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YT;
                                                                                           Ç
                                                                                           302 G; 163 T;
             Length:
Matches:
Conservative:
 Mismatches:
                                                                                             0
                                                                                             other;
951
6
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            forensic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SS
```

```
ABQ79607/
ID ABO7
                                                                             S
                            RESULT 32
                                                                                                                                                                                                                                    밁
                                                                                                      US-10-081-935-2 (1-18) x ABQ79606 (1-1031)
                                                                                                                                           Query Match:
                                                                                                                                                         Best Local
                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18) x AAS83866 (1-951)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                                                                                                                                       The invention relates to a DNA sequence located in a promoter of a secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cbh1 gene promoter.
                                                                                                                                                                                                                                                                                                                                                                                                 for optimized protein production and design better fungal strains for protein production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pakula T,
Jeenes D,
  ABQ79607
                                                                                                                                                                                                                                   Sequence 1031 BP;
                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Page 81; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                promoter; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Secreted protein; transcription; secretion stress; fungal; cbhl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T. reesei cbhl gene fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABQ79606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABQ79606 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-657583/70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-FEB-2002; 2002WO-FI00116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Trichoderma reesei.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-FEB-2001; 2001FI-0000272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                       Similarity:
                                                               3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
:::||||||
|||:::|||:::|||::::|||
00 GAGTTCTCACAAGATCTGATGGTTTTATTAGCGTCTGGCATTTCTTCTGCT
                                                  TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saloheimo
Archer D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                   290 A; 227 C;
DNA; 1201
                                                                                                                             303
42.00
84.62$
53.85$
51.22$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51
23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M, Uusitalo J,
Penttilae M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВР
                                                                                                                                                                                                                                   264 G; 250 T; 0 other;
                                                                                                                             Gaps:
                                                                                                                                                       Mismatches:
                                                                                                                                                                   Matches:
Conservative:
                                                                                                                                           Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                          Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Huuskonen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Þ
                                                   244
                                                                           15
                                                                                                                               4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Watson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18
```

standard;

```
RESULT 33
ABQ79605/C
ID ABQ75
AC ABQ75
AC ABQ75
XX 25-NC
XX 25-NC
XX 25-NC
XX 25-NC
XX Promc
XX Secre
KW promc
XX XX Trick
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                              US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                       Query Match:
DB:
                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                   Secreted protein; transcription; promoter; ds.
                                                                                                                                                                                                                                                                                                                                   No.:
                                                                                                                                                                                                                                                                                                                                                                                             secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cbhl gene promoter.
           Trichoderma reesei
                                                                                              25-NOV-2002
                                                                                                                       ABQ79605
                                                                                                                                              ABQ79605 standard; DNA; 1281 BP
                                                                                                                                                                                                                                                                                                                                                                       Sequence 1201 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New DNA sequence located in a promoter of a secretable protein, useful for optimized protein production and design better fungal strains for protein production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a DNA sequence located in a promoter of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 81; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pakula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-FEB-2001; 2001FI-0000272.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-FEB-2002; 2002WO-FI00116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Trichoderma reesei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Secreted protein; transcription; secretion stress; fungal; cbhl; promoter; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABQ79607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      reesei cbhl gene fragment.
                                                                                                                                                                                               452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2002-657583/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρΉ
                                                                                                                                                                                                                        w
                                                                                                                                                                                            PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
|||||||||
TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 414
                                                                       cbh1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Saloheimo M,
Archer D, P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                              (first
                                                                    gene
                                                                                                                                                                                                                                              x ABQ79607
                                                                                                                                                                                                                                                                                                                                                                       328 A;
                                                                                                                                                                                                                                                                      84.62$
53.85$
51.22$
24
                                                                                                                                                                                                                                                                                                                      366
42.00
                                                                      fragment.
                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              M, Uusitalo J,
Penttilae M;
                                                                                                                                                                                                                                                                                                                                                                      273
                                                                                                                                                                                                                                                                                                                                                                       Ç
                                                                                                                                                                                                                                              (1-1201)
                                                                                                                                                                                                                                                                                                                                                                      301 G;
                                              secretion
                                                                                                                                                                                                                                                                                                                      Length:
Matches:
                                                                                                                                                                                                                                                                                             Conservative: Mismatches:
                                                                                                                                                                                                                                                                                   Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Huuskonen
                                                                                                                                                                                                                                                                                                                                                                       299
                                             stress;
                                                                                                                                                                                                                                                                                                                                                                      T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Þ
                                                                                                                                                                                                                                                                                                                      1201
7
                                                                                                                                                                                                                                                                       4400
                                            fungal; cbh1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Watson
```

```
Ö
                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pakula T,
Jeenes D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pakula T,
Jeenes D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cbh1 gene promoter.
                                                                                                                                                                                   Secreted protein; transcription; secretion promoter; ds.
                                                             13-FEB-2001; 2001FI-0000272
                                                                                                             22-AUG-2002
                                                                                                                                                             Trichoderma reesei

    reesei cbh1 gene fragment.

                                                                                                                                                                                                                                               25-NOV-2002
                                                                                                                                                                                                                                                                       ABQ79602;
                                                                                                                                                                                                                                                                                             ABQ79602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 80; 84pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New DNA sequence located in a promoter of a secretable protein, useful for optimized protein production and design better fungal strains for protein production -
                                    (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS
                                                                                     13-FEB-2002; 2002WO-FI00116
                                                                                                                                     WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a DNA sequence located in a promoter of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-FEB-2001; 2001FI-0000272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-FEB-2002; 2002WO-FI00116.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-AUG-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS.
                                                                                                                                                                                                                                                                                                                                             532
                                                                                                                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                                                                                                                                                                PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                                                                                                             standard; DNA; 1474
                                                                                                                                                                                                                                                                                                                                            TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 494
Saloheimo M, Uusital
Archer D, Penttilae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saloheimo M,
Archer D, P
                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B₽;
                                                                                                                                                                                                                                                                                                                                                                                            x ABQ79605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  356 A; 290
                                                                                                                                                                                                                                                                                                                                                                                                                    396
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                              entry)

 Ousitalo J,
Penttilae M;

            Uusitalo J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   English
                                                                                                                                                                                                                                                                                             ВР
                                                                                                                                                                                                                                                                                                                                                                                          (1-1281)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; 317 G; 318
   Σ,
                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
             Huuskonen A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Huuskonen
                                                                                                                                                                                               stress;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,
                                                                                                                                                                                                                                                                                                                                                                                                                     4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1281
                                                                                                                                                                                              fungal; cbh1
               Watson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Watson
             A
```

```
XXCCCCCCCXXXX777XXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to a DNA sequence located in a promoter of a secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cbhl gene promoter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-657583/70
The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invent
                                                                                                                                                                                                      23-MAR-2000; 2000US-191637P
11-JUL-2000; 2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1474 BP; 397 A; 337 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New DNA sequence located in a
                                      Claim 1; SEQ ID NO
                                                                       genes from Drosophila
                                                                                     New isolated nucleic
                                                                                                                WPI; 2001-656860/75
P-PSDB; ABB58592.
                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                              pharmaceutical;
                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster expressed polynucleotide SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                         ABL02695;
                                                               interactions
                                                                                                                                                                              (PEKE )
                                                                                                                                                                                                                                            23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                    27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABL02695 standard; cDNA; 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          о
. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA sequence located in a promoter of a secretable protein, useful optimized protein production and design better fungal strains for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1466
                                                                                                                                                    'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w
                                                                                                                                                                              PΕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
|||||||||
:::::: |||:::||||||||:::
TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 1428
                                                                                                                                                                              CORP NY
                                                                                                                                                                                                                                                                                                                                                           developmental
                                                                                                                                                   Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   x ABQ79602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           470
42.00
84.62$
53.85$
51.22$
                                      2567;
                                                                         acid
a and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84pp;
                                                                                                                                                                                                                                                                                                                                               SS
                                                                                                                                                   ۲.
                                  21pp +
                                                                                                                                                    PWD,
                                                                        detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                                                                                                                                                                                          biology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-1474)
                                                                                                                                                   Myers
                                    Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              357 G; 383 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                           cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                    ŒΨ
                                                                                                                                                                                                                                                                                                                                                       signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1474
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 4 0 0
                                  English.
                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                         1000
and c
                                                                         cell-cell
```

invention

Sequence 1714 BP; 459 A; 389 C; 422 G;

444 T; 0 other;

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABQ79601/c
ID ABQ79601 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similari
                     The invention relates to a DNA sequence located in a promoter of a secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cbhl gene promoter.
                                                                                                                                                                       New DNA sequence located in a for optimized protein production -
                                                                                                                                                                                                                                                     Pakula
Jeenes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     useful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The sequence data for this patent did not form specification, but was obtained in electronic at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                           Disclosure; Page 78; 84pp; English.
                                                                                                                                                                                                                           WPI; 2002-657583/70
                                                                                                                                                                                                                                                                                                                                                                          22-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                               Trichoderma reesei
                                                                                                                                                                                                                                                                                                                                                                                                                                                          promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Secreted protein;

 T. reesei cbhl

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABQ79601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1569
                                                                                                                                                                                                                                                                                           (VALW ) VALTION
                                                                                                                                                                                                                                                                                                                     13-FEB-2001; 2001FI-0000272
                                                                                                                                                                                                                                                                                                                                               13-FEB-2002; 2002WO-FI00116
                                                                                                                                                                                                                                                                                                                                                                                                     WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ABB57737-ABB72072)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity:
                                                                                                                                                                                                                                                     ρH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                     production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCCACTCCCTGTTTCCCTCGTTGCCGCAGGACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ds.
                                                                                                                                                                                                                                                                 Saloheimo
                                                                                                                                                                                                                                                    Archer D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                          TEKNILLINEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transcription; secretion stress; fungal; cbhl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         399 A; 465 C; 381 G; 324 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 507
42.00
91.67%
66.67%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABL02695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                 Σ,
                                                                                                                                                                                production and design better fund
                                                                                                                                                                                                                                                    Penttilae M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1714
                                                                                                                                                                                                                                                                 Uusitalo J,
                                                                                                                                                                                                                                                                                           TUTKIMUSKESKUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (1-1569)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               did not form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismarches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels:
                                                                                                                                                                                                                                                                  Huuskonen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tormat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                part of the printed format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1569
8
3
1
0
                                                                                                                                                                                                                                                                 ٩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           other;
                                                                                                                                                                                fungal strains
                                                                                                                                                                                                                                                                  Watson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WIPO
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 37
AAQ58017/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x ABQ79601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
pMLO16del0(2) was used as a PCR template to yield a 280 bp fragment E (primers = AAQ58023 and AAQ58024), beginning at the promoter internal polylinker and ending at -720, and a 720 bp fragment F (primers = AAQ58026 and AAQ58028), beginning at -720 and ending at KspI at -16. Fragments D and E were purified from agarose gel and digested with BstEII-XbaI and XbaI-KspI respectively,& ligated to the 7.8 kb BstEII-XspI fragment of pMI-25 to produce produce
                                                                                                                   Cloning promoters active in used partic. for expression
                                                                                    Example; Figure 18B; 120pp; English.
                                                                                                                                                   WPI; 1994-083192/10
                                                                                                                                                                        Ilmen MH,
                                                                                                                                                                                                                                                                                                                         SdD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-MAR-2003
14-SEP-1994
                                                                                                                                                                                             (ALKO-) ALKO OY AB.
                                                                                                                                                                                                                19-AUG-1992;
                                                                                                                                                                                                                                     19-AUG-1993;
                                                                                                                                                                                                                                                          03-MAR-1994.
                                                                                                                                                                                                                                                                              W09404673-A1
                                                                                                                                                                                                                                                                                                                                                      misc_difference
                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Promoter; cellobiohydrolase 1; cbh1; pMI-27; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAQ58017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                         glucose-contg. medium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |||||||||| :::::: |||:::|||||||:::
TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                      Nakari TH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         altered cellobiohydrolase 1 (cbh1) promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (updated)
(first en
                                                                                                                                                                                                                9205-0932485
                                                                                                                                                                                                                                     93WO-FI00330.
                                                                                                                                                                                                                                                                                                  /*tag=
/label=
                                                                                                                                                                                                                                                                                                                                                     /label= deletion site 1054..1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers 704..709
                                                                                                                                                                                                                                                                                                                      /*tag= d
/label= altered sequence
1774..1776
                                                                                                                                                                                                                                                                                                                                                                                      748..749
                                                                                                                                                                                                                                                                                                                                                                                                                    716..748
                                                                                                                                                                                                                                                                                                                                                                                             /*tag= b
/label= polylinker
                                                                                                                                                                                                                                                                                                                                                                          '*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                            "tag= a
label= altered sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         565
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                        Nevalainen
                                                                                                                                                                                                                                                                                                  start codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1776
                                                                                                                    a desired
of genes i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (1-1714)
                                                                                                                                                                      XXX,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
                                                                                                                    d environmental in Trichoderma
                                                                                                                                                                      Onnela
                                                                                                                                                                      ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1714
7
                                                                                                                                                                      Pentitilae
                                                                                                                  condition -
fungal hosts
                                                               bp fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of pMI-27.
                                                                                                                                                                      ME
```

```
RESULT 38
AAQ58018/c
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSSSSSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x AAQ58017 (1-1776)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity:
      WPI; 1994-083192/10
                                                                              19-AUG-1993;
                                                                                                 03-MAR-1994.
                                                                                                                                                         Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pMI-27. The cbh1 promoter of pMI-27 has sequence alterations at posns. -1505-1500 (genomic sequence GTGGGG, altered sequence TCTAAA) and at posn. -720 to -715 (genomic sequence GTGGGG, altered sequence TCTAGA) upstream of the translation initiation codon of ir cbh1 promoter. The sequence of the altred cbh1 promoter in pMI-27 is provided in AAQ58017.
                          Ilmen
                                                             19-AUG-1992;
                                                                                                                    WO9404673-A1
                                                                                                                                                                                misc_difference
                                                                                                                                                                                                            misc_difference
                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                  25-MAR-2003
14-SEP-1994
                                          (ALKO-) ALKO OY
                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                              misc_difference
                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                                                                             Promoter;
                                                                                                                                                                                                                                                                                                                                                                Sequence of
                                                                                                                                                                                                                                                                                                                                                                                                             AAQ58018;
                                                                                                                                                                                                                                                                                                                                                                                                                               AAQ58018 standard; DNA; 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1776 BP; 490 A; 399 C; 430 G; 457 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1029
                         ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                                                                                                                                                                                            cellobiohydrolase 1;
                        Nakari
                                                                                                                                                                                                                                                                                                                                                               altered cellobiohydrolase 1 (cbh1) promoter of pMI-28.
                                                                                                                                                                                                                                                                                                                                                                                 (updated)
(first ent
                                                                              93WO-FI00330
                                                             9208-0932485
                                                                                                                                                                                                         /*tag= c
/label= deletion
773..778
                                                                                                                                                                                                                                                                                              Location/Qualifiers 704..709
                                                                                                                                                                                 1054..1059
                                                                                                                                                                                                                                                 /*tag=
/label=
                                                                                                                                                                                                                                                                   /*tag= a
/label= altered sequence
716..748
                                                                                                                                    /label= start codon
                                                                                                                                            /*tag=
                                                                                                                                                       /label= altered sequence
1774..1776
                                                                                                                                                                                                                                         748..749
                                                                                                                                                                                          /label= altered sequence
                        HT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                590
42.
                                                                                                                                                                                                                                                                                                                                                                                  entry)
                       Nevalainen KMH,
                                                                                                                                                                                                                                                 polylinker
                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                           cbh1; pMI-28; ss
                                                                                                                                                                                                                      site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches:
Indels:
                       Onnela M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1776
7
4
2
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15
                       Pentitilae ME;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  intact
```

```
P X P T T X R X P X P X P X P X X R X X E X X D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C D T X C 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABQ7959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pMLO16del0(2) was used as a PCR template to yield a 280 bp fragment G (primers = AAQ58023 and AAQ58025), beginning at the promoter internal polylinker and ending at -720, and a 720 bp fragment H (primers = AAQ58026 and AAQ58028), beginning at -720 and ending at KspI at -16. Fragments G and H were purified from agarose gel and digested with BstEII-XbaI and XbaJ-KspI respectively, & ligated to the 7, 8 kb BstEII-XbaI fragment of pMI-25 to produce produce pMI-28. The cbhI promoter of pMI-28 has sequence alterations at posns. -1505-1500 (genomic sequence GTGGGG, altered sequence TCTAAA), -1001-996 (genomic sequence GTGGGG, altered sequence TCTAAA), and at posn. -720 to -715 (genomic sequence GTGGGG, altered sequence TCTAAA) upstream of the translation initiation codon of intact cbhI promoter. The sequence of the altred cbhI promoter in pMI-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pMLO16del0(2)
G (prime-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cloning promoters active used partic. for expressi in glucose-contg. medium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity:
     Disclosure;
                                                                                                                                                                                                                                                                                                                13-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                   13-FEB-2002; 2002WO-FI00116.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABQ79594
                                                protein
                                                                                                                                                WPI; 2002-657583/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Trichoderma reesei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example; Figure 18C; 120pp; English
                                                                    New DNA sequence located in a promoter of a secretable protein, for optimized protein production and design better fungal strain
                                                                                                                                                                                              Jeenes
                                                                                                                                                                                                                                                                     (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        provided in AAQ58018.
pdated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    reesei cbh1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1029
                                                                                                                                                                                              Ď,i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              w
                                                production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein; transcription;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard; DNA; 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                                                                  Saloheimo
                                                                                                                                                                                              Archer
Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for expression of genes in Trichoderma
ontg. medium
                                                                                                                                                                                                                                                                                                                   2001FI-0000272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene fragment
     74;
                                                                                                                                                                                           Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           x AAQ58018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       490 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            590
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                     o M, vu.
Penttilae
                                                                                                                                                                                              Uusitalo J,
nttilae M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          400 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-1776)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                desired environmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   secretion stress; fungal; cbhl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ູດ
                                                                                                                                                                                                                     Huuskonen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                     Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    condition - fungal hosts
                                                                                                                                                                                                                     Watson
                                                                       strains
                                                                                                                                                                                                                     Þ
                                                                       useful
ns for
```

```
ARGSULT 40
ARG79597/G
ID ARG79
XX ARG79
AC ARG79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment
Pred. No.:
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *SSSSSSSSSSX&
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a DNA sequence located in a promoter of a secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cobil gene promoter.
                                          The invention relates to a DNA sequence located in a promoter of a secretable protein, where the DNA sequence mediates transcriptional down-regulation of secreted proteins under secretion stress. The DNA sequence, promoter or the fungal host is useful to optimize protein production. The methods are useful to or to modify fungal strains for other purposes and selectively regulate the expression of certain undesired or desired proteins in the host. The present sequence represents a T. reesei DNA fragment located upstream of the cobhl gene promoter.
                                                                                                                                                                                                                                                                                                 Disclosure;
                                                                                                                                                                                                                                                                                                                                                 New DNA sequence located in a promoter of a for optimized protein production and design protein production -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-FEB-2002; 2002WO-FI00116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Trichoderma reesei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T. reesei cbhl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABQ79597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABQ79597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1824 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (VALW ) VALTION TEKNILLINEN TUTKIMUSKESKUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-FEB-2001; 2001FI-0000272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200264624-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1466 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002-657583/70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein; transcription;
; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard; DNA; 1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Archer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Saloheimo
                                                                                                                                                                                                                                                                                                 Page 76; 84pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             x ABQ79594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 492 A; 406 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                610
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Penttilae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Uusitalo .
nttilae M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-1824)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    452 G; 474 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               secretion stress; fungal; cbhl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Huuskonen
                                                                                                                                                                                                                                                                                                                                                                        secretable protein, useful
better fungal strains for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۶
```

Sequence 1874 BP;

499

A ;

420 ű

467

ູດ

488 H ''

0

other;

Search completed: November 13, 2003, 12:08:30 Job time : 842 secs

•

```
Sequence 1918, Ap
Sequence 15656, A
Sequence 9220, Ap
Sequence 9057, Ap
Sequence 18, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 132, App
Sequence 2891, Ap
Sequence 16275, A
Sequence 19, Appl
                                                                                                                                                                            9137, Ap
15702, A
15674, A
8728, Ap
3, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3703, Ap
7, Appli
9931, Ap
8, Appli
16386, A
6421, Ap
                      18, Appl
20, Appl
1, Appli
1, Appli
1, Appli
1, Appli
33, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: PLEISCHMAN, Robert D.
APPLICANT: PLEISCHMAN, Robert D.
APPLICANT: PRASER, Claire
APPLICANT: PRASER, Claire
APPLICANT: WHITE, Owen R.
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
TITLE OF INVENTION: TUBERCULOSIS
TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 2
LENGTH: 4403765
TYPE: DNA
ORGANISM: Mycobacterium tuberculosis

    Appli
    Appli
    Appli

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: Un' bases at various positions throughout the sequence OTHER INFORMATION: represent a, t, c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10081, A
                        Sequence 18
Sequence 20
                                                                                                                      Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                  Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Seq
                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence Sequence (
                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4403765
US-09-066-597-1
US-08-189-564B-20
US-08-466-047B-20
US-09-254-733-1
US-08-374-077C-1
US-08-374-077C-1
US-08-374-077C-1
US-08-374-077C-1
US-08-539-875A-1
US-09-252-991A-15702
US-09-252-991A-15702
US-09-252-991A-15556
US-09-252-991A-9220
US-09-252-991A-9220
US-09-352-991A-9220
US-09-352-991A-9220
US-09-352-991A-9220
US-09-352-991A-9220
US-09-352-991A-9220
US-09-252-991A-9220
US-09-252-991A-9220
US-09-252-991A-9220
US-09-252-991A-9230
US-09-313-294A-2891
US-09-313-294A-2891
US-09-252-991A-16275
US-09-252-991A-16275
US-09-252-991A-16275
US-09-252-991A-16275
US-08-913-014A-7
US-08-913-014A-7
US-08-913-014A-7
US-08-913-014A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-252-991A-6421
US-09-252-991A-16212
US-09-252-991A-10081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-09-103-840A-2 (1-4403765)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 2, Application US/09103840A; Patent No. 6294328; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.85e+05
47.00
92.86%
64.29%
57.32%
    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                          Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 1
US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
    Command line parameters:
-MODEL=frame+ p2n.model.-DEV=x1h
-MODEL=frame+ p2n.model.-DEV=x1h
-OS=/Cgn2_1/USFTO_spool/US10081935/runat_12112003_144407_3656/app_query.fasta_1.199
-OS=/Cgn2_1/USFTO_spool/US10081935/runat_12112003_144407_3656/app_query.fasta_1.199
-DB=J88ucd_Patents NA -OFMT=fastap -SUFFIX=rni -MINMATCH=0.1 -LOOPCL=0
-LOOPEXT=0 -UNITS=bits -STRAT=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR_SCNET=1 -END=1 - THR_NHA=100 -THR_NHN=0 -ALIGN=400
-USFR=US10081935_GCS - UNFMT=ptc -NOFM=sext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-USFR=US10081935_GCS - NOFM=sext -HEAPSIZE=500 -MINLEN=0 -NORU=6 -ICPU=3
-NO_MMAP -LANGEQUERY -NGG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG
-DEV_TIMEOUT=120 -WARN TIMEOUT=30 -THRANS=1 -KGAPOP=10 -KGAPOF=6
-FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5 -FGAPOP=6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Appli
Sequence 1, Appli
Sequence 34, Appl
Sequence 8612, Ap
Sequence 21, Appl
Sequence 21, Appl
Sequence 21, Appl
Sequence 22, Appl
Sequence 22, Appl
Sequence 22, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Appli
Sequence 1, Appli
                                                                                                                        November 13, 2003, 11:51:07; Search time 52 Seconds (without alignments) 152.786 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 lBsued_Patents_NA:*
1: /cgnl2_6/ptodate/2/ina/5A_COMB.seq:*
2: /cgnl2_6/ptodate/2/ina/5B_COMB.seq:*
3: /cgnl2_6/ptodate/2/ina/6A_COMB.seq:*
4: /cgnl2_6/ptodate/2/ina/6B_COMB.seq:*
5: /cgnl2_6/ptodate/2/ina/PCTUS_COMB.seq:*
6: /cgnl2_6/ptodate/2/ina/PcTUS_COMB.seq:*
                  GenCore version 5.1.6
(c) 1993 - 2003 Compugen Ltd.
                                                                                            nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 US-09-103-840A-2

1 US-09-103-840A-1

US-08-525-697-3

US-09-058-489-34

US-09-058-489-34

US-09-134-001C-959

US-09-134-001C-959

US-08-389-564B-21

US-08-389-564B-22

US-08-466-047B-22

US-08-466-047B-22

US-08-389-564B-18
                                                                                                                                                                                                                                                                                                                                                                                                                                            of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                      569978 seqs, 220691566 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                          0.5
0.5
0.0
0.7
                                                                                                                                                                                                                                                                                                    Xgapop 10.0 , Xgapext C Ygapop 10.0 , Ygapext C Fgapop 6.0 , Fgapext 7 Delop 6.0 , Delext 7
                                                                                                                                                                                                                                                MQFSHALIALVAAGLASA 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match Length DB
                                                                                                                                                                                                            US-10-081-935-2
82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4403765
4411529
13048
13048
10091
471
504
1781
1781
1781
1781
1781
                                                                                                                                                                                                                                                                                      BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                          Fotal number
                                                                                              protein
                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jatabase
                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
No.
```

26432

000000

```
TYPE: nuclei
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                            US-08-525-697-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                 ..
No.:
                                                                                                                                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Christgau, Stephan
APPLICANT: Andersen, Lene N
APPLICANT: Andersen, Lene N
APPLICANT: Andersen, Lene N
APPLICANT: Andersen, Lene N
APPLICANT: Heldt-Hansen, Hans P
APPLICANT: Heldt-Hansen, Hans P
APPLICANT: Dalboege, Henrik
TITLE OF INVENTION: AN ENZYME EXHIBITING MANNANASE ACTIVITY
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 57957640 No. 5795764disk of No. 5795764th America, Inc.
STREET: New York
STREET: Abo Lexington Avenue, 64th Floor
COUNTRY: United States of America
STREET: 1014-6401
COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                              Sequence 1, Application US/09103840A

Sequence 1, Application US/09103840A

Recent No. 6294328

GENERAL INFORMATION:

APPLICANT: FLEISCHMAN, Robert D.

APPLICANT: FRASER, Claire M.

APPLICANT: FRASER, Claire M.

APPLICANT: VENTER, John C.

TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM

TITLE OF INVENTION: DNA SEQUENCES.

TITLE OF INVENTION: DNA SEQUENCES.

FILE REFERENCE: 24566-20007.00

CURRENT APPLICATION NUMBER: US/09/103,840A

CURRENT PILING DATE: 1998-06-24

NUMBER OF SEQ ID NOS: 2

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 1

LENGTH: 4411529
                      1218600 TTCGCGCACGCCCTGATCGTTGCCGCTGAATTGGCG 1218641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1219072 TTGGCGCACGCCCTGGTGGTCGATCGCTTGCCGCTGAATTGGCG 1219113
3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-09-103-840A-1 (1-4411529)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Harrington, James J.
REGISTRATION NUMBER: 38,711
REFERENCE/DOCKET NUMBER: 4004.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/525,697
FILING DATE: 21-SEP-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA ORGANISM: Mycobacterium tuberculosis OTHER INFORMATION: H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Application US/08525697
Patent No. 5795764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.85e+05
47.00
92.86%
64.29%
57.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                               US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-525-697-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
ADDRESSEE: No. 57957640 No. 5795764disk of No. 5795764th America, Inc.
STREET: 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24 ATGAAGCTTTCTCACATGCTCCTCAGCCTCGCCAGCCTGGGGGTGGCGACGCCT 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/08525697
Sequence 1, Application US/08525697
Sequence 1, Application US/08525697
Sequence 1, Application US/08525697
Septement No. 5795700
APPLICANT: Addersen, Lene N
APPLICANT: Kauppinen, Sawari
APPLICANT: Helde-Hansen, Hans P
APPLICANT: Dalboege, Henrik
TITLE OF INVENTION: AN ENZYME EXHIBITING MANNANASE ACTIVITY
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: New York
STATE: New York
COUNTRY: New York
COUNTRY: New York
COUNTRY: No York
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC Compatible
COMPUTER: No YORK: PC-DOS/MS-DOS
SOFTWARE: PAPELICATION DATA:
APPLICATION NUMBER: US/08/525,697
FILING DATE: 21-SEP-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-081-935-2 (1-18) x US-08-525-697-3 (1-248)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
TELECOGENCE: 212-86/----
TELEPHONE: 212-86/----
TELEPHONE: 212-86/----
TELEPHONE: 212-86/----
APPLICATION DMATA:
APPLICATION NUMBER: DK 0486/93
FILING DATE: 30-APR-1993
CLASSIFICATION: 435
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 248 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 4004
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEFAX: 212-878-965
PRIOR APPLICATION DATA:
APPLICATION NUMBER: DK 0486/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Harrington, James J. REGISTRATION NUMBER: 38,711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1302 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: DK 0
FILING DATE: 30-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                       3.04
44.00
77.78
44.44
53.66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
```

```
/trānslation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
DFKCHICSKPELPGQITPCVEEACPLDARISYSNIVVDQCSKAGVPIDIPPVOTTAAPE
PSETAEPTEEPTEEPTAEPTAEPTAEPTHEPTEEPTAVPTGTGGGVPTGTGSFTVTGR
PTAGTPAETAEPTAEPTAEPTAELGLAAYL"
981 c 903 g 1013 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AaM00649.1"
/db_xref="c01:19881029"
/tabalation="MRNSTMLNEPSISTTHIPSEGGPLGYPVSREDWKRGGTEWIEGT
DYPEDGWCMWGRFGTLJNRRPVVRLLLORQLEGRCDWNVVRCRGMGFRATDNEHGWAIW
RQHIVFLLGGHGQRVQLDRRSAGEARARGLLPRFHLKPRTDTNHIPPLCEPTPGGFYE
ARTISDLPHTWTTHTSNTHEDHTQPERSEPSYQOMRPDSETEEDSDTDGSHAYMELIEDQ
DEDVLLDPDPTFYDEFTPERSHETNWTRERRATSGQGDGLWGTPLHRETHSNDHERLR
GWRWARRGERGAMMPAETFTCPQGRRPW"
                                                                                                                                                                                                                                                                                                                                                                                                                             VRL 29-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 241087)
Davison, A.J.
Direct Submission
Submitted (UG-FEB-2002) MRC Virology Unit, Church Street, Glasgow Gll 5JR, U.K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chimpanzee cytomegalovirus
Uiruses; dsDNA viruses, no RNA stage; Herpesviridae;
Uiruses; dsDNA viruses, no RNA stage; Herpesviridae;
Betaherpesvirinae; Cytomegalovirus.

1 (bases 1 to 241087)
Bovison, A.J., Dolan, A., Akter, P., Addison, C., Dargan, D.J.,
Alcendor, D.J., McGeech, D.J. and Hayward, G.S.
The human cytomegalovirus genome revisited: comparison with the dimpanzee cytomegalovirus genome
J. Gen. Virol. 84 (Pt 1), 17-28 (2003)
                                                                                                                                                                                                                                                                                                                  linear

    .241087
/organism="Chimpanzee cytomegalovirus"

                                                                                                                                                             3821
18
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                            Chimpanzee cytomegalovirus, complete genome.
AF480884
                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/db_xref="taxon:188763"
1. .687
/rpt_family="TRL"
/rpt_type=inverted
1. .297
/note="terminal redundancy"
                                                                                                                                                                                                                                                                                                                                                                                                                             241087 bp
                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x AF013256 (1-3821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Region: UL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             714. .1628
/codon_start=1
/product="RL1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="a"
688. . 200038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF480884.1 GI:19881028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                          2.72e-05
82.00
100.00$
100.00$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /virion
                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                             AF480884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12533697
                                                                                          924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                               Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                 Query Match:
                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                        AF480884/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                            Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                             Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                     а
                                                                                 /db_xref="caxon:199306"
join(175..255,334..472,575..939)
codon strate:1
/product="antigen 2"
/protein_id="AAC49612.1"
/db_xref="C1:1256444"
/framslation="MOFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
PFCTARSTRELPGTTPFCVEACPLDARIS'SNIVVDQCSKAGVPIDIPPVOTTAAPE
PSETAEPTAEPTAEPTAEPTAEPTAEPTHEPTEEPTAVPTGTGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNURAS'VGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF013256 3821 bp DNA linear PLN 22-AUG-2000 Coccidioides immitis proline rich antigen (PRA) gene, complete cds. AF013256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 1821)
Peng,T., Orsborn,K.I., Orbach,M.J. and Galgiani,J.N.
Direct Submission
Submitted (09-JUL-1997) Infectious Disease, University of Arizona,
1501 N. Campbell, Tucson, AZ 85724, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 382)
Peng,T., Orsborn,K.I., Orbach,M.J. and Galgiani,J.N.
Proline-rich vaccine candidate antigen of Coccidioides immitis:
conservation among isolates and differential expression with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1435
118
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .3821
/organism="Coccidioides posadasii"
/mol_type="genomic DNA"
/strain="silveira"
/db_xref="taxon:199306"
                  1. .1435
Organism="Coccidioides posadasii"
/mol_type="genomic DNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      join(737. .976,1055. .1193,1296.
/gene="PRA"
/product="proline rich antigen"
join(896. .976,1055. .1193,1296.
/gene="PRA"
/note="antigen 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="proline_rich_antigen"
/protein_id="AAB66894.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   spherule maturation
J. Infect. Dis. 179 (2), 518-521 (1999)
99094977
                                                                                                                                                                                                                                                              361 t
                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x CIU51200 (1-1435)
cocation/Qualifiers
                                                                                                                                                                                                                                                               327 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF013256.1 GI:2331288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Coccidioides posadasii
                                                                                                                                                                                                                                                                                                                             1.01e-05
82.00
100.00$
100.00$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="PRA"
join(737. .9
                                                                                                                                                                                                                                                               414 C
                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9878042
                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                               Pred. No.:
                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
FEATURES
                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF013256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

```
/protein_id="Aam00658.1"
/db_xref="G1:19881038"
/translation="MAADPHTLSMLSGLCNKALWLSICLLIVAFLLASSSTTTMVYV
SGPGRPLSLHANFTODDVHWYRLKGNETVSLCSCMVGDGVFIARSNMSLGCLPWQL
ILFNMTVNDGGLYYNGTNGTTRTSTTVWFRVTIGLQFAPKTTRPRKATLNKAKLSE
RTGMSLFRYARDLDSVRRKDDDNNIHLGLVGAGLFVALVIVCLMGWLKILCTH"
                                                                                        /translation="MPPPRSFGCGGLNKVWICSCLLILVLVVCAPRGSPHWSRVRRQT
SLSLPSCSPYNCTVGGDVS.INSTIPVACNSTEWGRYYNSSFKVPLCQLWGSHNRLSGQ
NLRLSLTCSPTTLLHSTSDGYTGTYRQVGNNCPHHHEIMKTCFNLTVLAKPTTAAP
TTTSVPTPTLLLTTVTVIVCYSFPANTVLSSTWTTTAGNASVANGMFYRQYOPLSLA
OTHRTAPLNATDNAEDVANLVATYASWGLVLLLLATVLVLFDLGLPQTAMRWRDQGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MFYTFFVLTYVCNKLHEVPREVECNKVTGYIGONVSLKSITHVW
SNSTMSVHTVSSLYMMCERESNDAPPNFYNVTDIOFNCTEEELLLEGTTOYTAVYYY
RGYDTVPRPCMLYSTCYNVTVKNRTYEAEKHTFASSIWIPPVAVVTLIILLSVIKIPO
RIWEEWMQYRYRDTVYT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /trānslation="MCHRRLEWFCKTSFYAAMICVFVTSTDLQNACVEEKARQGSNVTFDARRYSGSNVTFDARRYSGSNVTFDARRYSGSNVTFDARRYSGSNVTTNTVRSTSTTTLNVTSVSNSWSFDTCFKLTVTIVKPPKPKRTTTLKRPQEPVTKPKTTVTVTVKPKTTVTSTSTNSWSFDTCFKLTVTISTWICLISIVVILFYFRIPQKLLLPFMCPRPKDETLMIPQTEL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="MVVVSRGLTSYYLIPLLCKVPPLLLTWPDSAHGLDIVDEELSH
DYEEISVVRFAMQQVGFQMLPAPIMGRRSEIDEDRESSPAQADVYDVRSPRPPRP
RLQSPYHHQERPPLPSGIRWGHELQLFLQVRQQELLQQREBERRQQQRRXYRWR
RPYFRPPDPDPSYPARSSILPARAPSLAHGAEQLIAMSRGYGERRASPSRGMASEPAS
SVEEEQYRRVVGNVTRRRHHPQHRSYRRRNALVANGRDSLLLARLRINHQRQTRFTGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /trānslation="MNVTGQPPSSPPFPGPSSSTWNVTTGGEDGGERSVTTTTVAVST
RPTTLSGKTNASTSTATSTAPVTTTRTTTRVRTTRTNSTSGVTTRTTTTTVRPQPDCL
LRTQLSYHHTVQAQPQKIAVHYTWLILLILFIVLVILFCLRIPQKLYDKWRNRRRYGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /trānslation="MPFGSYIVNCGFLTWFVLSAVFKYEFSEACEEHTTYETHPLLLG
GKPLLGAHQTAYWYKHCOSMTSSNDKLTPLCYYPPRNSKGKLDESABHTFINYLCSN
GKTLITARINI-TDAGGYCRKGNSTRHDSWPTNSCYRVIVRPITKTTSKKPESGFTRVK
TTYDNYSVTLLEEPLLFQTHRSTQNAHIAWLFIAVVIIVVIILFFFKIPOKLFDKWKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RCRYFGRNRGSARRRDDGTGSGAAGHGGSRPGGAGFSQLRERIVTDLQLFRLRCHGWT
RQASRRIRTRWEEENTVMSDAASRLRAWFSRRTTYWQRTWVPGENPSAEAGELAVPPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/product="glycoprotein UL11"
/protein_id="AAM00662.1"
/db_xref="G1:19881042"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="glycoprotein UL10"
/protein_id="AAM00661.1"
/db_xref="GI:19881041"
   /product="glycoprotein UL6"
/protein_id="AAM00657.1"
/db_xref="GI:19881037"
                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/product="glycoprotein UL7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/product="glycoprotein UL8"
/protein_id="AAM00659.1"
/db_xref="G1:19881039"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="glycoprotein UL9"
/protein id="AAM00660.1"
/db_xref="GI:19881040"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16623. .18392
/codon start=1
/product="UL13"
/protein id="RAM00663.1"
/db_xref="G1:19881043"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15758. .16468
/note="RL11 family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13799. .14305
/note="RL11 family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="RL11 family"
/codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="RL11 family"
/codon_start=1
                                                                                                                                                                                                                                                                                                                     'note="RL11 family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HKSYAKTGHFSAFH"
                                                                                                                                                                                                                                                                                           13052. .13693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14327. .14860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14959. .15657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VYVVDTEL'
                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                  /trānslation="MRYVTLCSTLLLLAIGATAIHNDVCTSLDGGTRLLCKCNRWNN SNPRPTATSGTHITCLANCTCKRYTEPLISYLGIYSAWGAGSFIATLIILLVIFFV IYSRERPADDDNGTVEDPFLAYRDLTRKKLDSHASKKONIYERIPYRPCRQLRDDEPP LITNAEDDDEEEDNF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MSETCSVATTLLLVLALSQLTEEDNTTNSSVNTSTNDSNISFTT
TSSPKATSTSPTPSFTPNLTTSTEYLNSTVNSTHTPLTTTTLPTSTTSTHSFQNTTIT
EYSTTYNLCNTTETVSSNSTESITATSSCNTANTTFDNTTISTAIGTTTEIVIKAW
TYTHGKESERVYTLHVNSTFQNCTRTVWNHPYNITHKNRKENSPHTLCEASSGHSVKH
NHHKLCLQCTPRNLLLEDLMYNHSGKYIAECDDGQNHAQQGFILTVNATHITHYTRVC
QPDKDTVTTRPISTHLFNQNYSYQGHYPGASANSHRGAMAVGLFLMACVLLFFRRRYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / translation="MVDHFAITWTLVFLTLASGTVTSSCHTSHSVSSTTVATTSSTPS
VNTTNSADTSNTSTTESSTTSITSTSLTTGTSAVSSASTTSKPTTFSTTIQS
TTTTKTTYT ITSTVPASPTNTTKFECDTATTKTWINITAKVGDNVFFPACNTSGKY
HARMYRKVVNTKETDLCLFGPDYYSTSPQAGICFKCHWQSWTIYDVTTENAGNYIVRV
HGDGNNHYDKGYRLQVTSNHTTGTNRKKCPNDFTSYTPDHDKNKETKTIENEFGNNYD
OPTFPMGMHAIWAAVVVIVALLALYMGSRSSVTIVKGGKPRYKKLSNKDPDEYWASP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="UL2"
fprotein id="AAM00654.1"
db_xref="GI:19881034"
/translation="MRGDAVSILIVEDLDLPSFGSFNASHAYYSFRVLRGIFYVTVVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /procedin_id="AAM00656.1"
/db_xref="G1:19881036"
/fb_xref="G1:19881036"
/framslation="MPLGYSVDFMRFGFALCRAPGHVQTSVTTLVLLTCAVSSSLTAS
TSAARGSTGGYRNLTORANLSS PDTPTTSTLPRQ1AAPPAHSSGLFEQFYHGLAIHA
AWVTAFVLVGFLIFFANVFHVPQTIHGWYRDLRDHRTLFGRRYQRLVNS"
                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MKRDALTLKYVVSTAFCILSSAKPTPTTDALGPLRLRDTYTTCE
TRRPTLASRLANTGHSVSWRYALPGHKFTQTWRLCSITDAHSTTRDVRKARFICTR
HSWTLYNUTVEDMGRYVLTDESTTGDESFYFILSSRAVCEAYATRCAWKYLDNRCQT
LKPAGTNPPPDDLERDWMLNISIHCAWIAGLLIVASLVGFLLRLRRVGYQNAYRRLSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAM00655.1"
/db_xref="GI:19881035"
/trānslation="MRRRGWRGPPGGATFKYGLLVVLTSWVSVIGGIHYGAYDHHVDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RVIKSGDNVTLTSPFYHLGSNFWYKRNATGTYPVCYSVKTIYTFPVDVRVECKHHNNI
TIFNPTEDGWGIYSLVTESPFLNDNKHYTAEFYVTIDTRNNGTBEELDYDYDDYGSGF
GSGLGLESSGLGLESGSGNEETSGSGDEIQNGFLITY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="RL11 family; contains hydrophobic domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="RL11 family; contains hydrophobic domain"
                                                                                                                                                                                                                                                                                                        /producc="IgG Fc-binding glycoprotein RL11"
/protein_id="AAM00651.1"
/db_xref="GI:19881031"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(10256..10432)
/note="contains hydrophobic domain"
/codon_start=1
product="virion glycoprotein RL10"
protein_id="AAM00650.1"
db_xref="G1:19881030"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="glycoprotein TRL13"
/protein_id="AAM00653.1"
/db_xref="GI:19881033"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="glycoprotein RL12"
/protein_id="AAM00652.1"
/db_xref="GI:19881032"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note="RL11 family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9123. .10124
/note="RL11 family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="RL11 family"
/codon_start=1
                                                                                                                                                                                                                                                      'note="RL11 family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WVLMWIKLLRDNFF"
10504. .11097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RDTEPLLQFDAYSE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1/product="UL4"
                                                                                                                                                                                                                                                                                           'codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product = "ULS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2130. .12981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .9021
                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
```

```
Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage : CP 5706 91057 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)

The cDNA library to be analyzed within the framework of this project was created using a Botrytis cinerea strain which was grown under conditions of nitrogen deprivation, which is the normal situation for B. cinerea during its development on its host plant. The library was produced in an oriented direction, in the pBSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BOLIVOIS cinerea strain T4 cDNA library under conditions of nitrogen deprivation.
                                                                                                                                                                     multiplation of the control of the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (01-SEP-1999) Phytopathologie, INRA, route de St Cyr, 78026 Versailles, France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALI13934.1 GI:5828553
CDNA library; nitrogen deprivation.
Botryotinia fuckeliana
Botryotinia fuckeliana
Botryotinia fuckeliana
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Leotiomycetes;
Helotiales; Sclerotiniaceae; Botryotinia.
Gases I to 660)
Bitton,F., Levis,C., Fortini,D., Pradier,J.M. and Brygoo,Y.
Direct Submission
                                                        CNSO1AO7

CNSO1AO7

CNSO1AO7

CONGINE CINERA STRAIN T4 CDNA library under conditions of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /noTe="Genoscope sequence ID : W59D121"
215 c 132 g 153 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     660
3
0
0

    .660
    /organism="Borryotinia fuckeliana"
/mol_type="mRNA"
/strain="T4"
    /db_xref="taxon:40559"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18) x CNS01AO7 (1-660)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                      AL113183.1 GI:5827802
                                                                                                        nitrogen deprivation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13.6
48.00
72.22%
55.56%
58.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 660)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoscope.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
02
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                               ACCESSION
                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
       RESULT 7
CNS01AO7
                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
CNS01B92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                      EVOVVEEEENVVVEETGREERDRDEDAMIIPWGEWWDEDLLSDLETTAAGTEEVAVEK
EEETTKGAADTTTVTASETTDDVIOTNELPCELNNAEEISSGRAVVGTCPRREGPHR
SFFRLCLGLWASSHLARRAISVS"
18719. .19780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage : CP 5706 91057 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr Theb: www.genoscope.cns.fr The cDNA library to be analyzed within the framework of this project was created using a Botrytis cinerea strain which was grown under conditions of nitrogen deprivation, which is the normal alluation for B. cinerea during its development on its host plant. The library was produced in an oriented direction, in the pBSII
ADGQVKETSQQSMTVTTEGEREQKTEQRVEKAAKGGEETIEKVETDETRVAEETKVVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLN 02-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL112861
AL112861.1 GI:5827480
CDNA library: nitrogen deprivation.
CDNA library: nitrogen deprivation.
Botryotinia fuckeliana
Botryotinia fuckeliana
Botryotinia fuckeliana
Botryotinia fuckeliana
Botryotinia fuckeliana
Bukaryota; Fungi; Ascomycota; Pezizomycotina; Leotiomycetes;
Helotiales; Sclerotiniaceae; Botryotinia.
Bitton, F., Levis, C.
Bitton, F., Levis, C.
Bitton, F., Levis, C.
Bitton, F., Levis, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CNSO1AF9 660 bp mRNA linear PLN 02. Botrytis cinerea strain T4 cDNA library under conditions of nitrogen deprivation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     St
                                                                                                                                                                                                                                                                                                                                                                                       1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (01-5EP-1999) Phytopathologie, INRA, route de 78026 Vereailles, France
2 (bases 1 to 660)
                                                                                                                                                                     241087
10
5
1
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : W05H031"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
110
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .660
/organism="Botryotinia fuckeliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                      Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism= ________
/mol__type="mRNA"
/strain="T4"
/db_xref="taxon:40559"
/note="Genoscope sequence ID :
                                                                                                                                                                        Length:
Matches:
                                                                                                                                                                                                                                                                      Indels:
                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                         US-10-081-935-2 (1-18) x AF480884 (1-241087)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x CNS01AF9 (1-660)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                     942
52.00
93.75%
62.50%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13.6
48.00
72.22%
55.56%
58.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vector
                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                    Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CNS01AF9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE CC
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
```

```
US-10-081-935-2 (1-18) x CNS01CQG (1-696)
                                                                                                                       x CNS01C2S (1-660)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
 13.6
48.00
72.22%
55.56%
58.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14.3
48.00
72.22$
55.56$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                    Percent Similarity:
Best Local Similarity:
                                                                                                                     US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vector.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
DB:
                                                                  Query Match:
DB:
                                                                                                                                                                                                                   RESULT 10
CNSO1CQG
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CNS01DHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage : CP 5706 91057 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr The be. : www.genoscope.cns.fr) The cDNA library to be analyzed within the framework of this project was created using a Botrytis cinerea strain which was grown under conditions of nitrogen deprivation, which is the normal allustion for B. cinerea during its development on its host plant. The library was produced in an oriented direction, in the pBSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage : CP 5706 91057 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr )
The cDNA library to be analyzed within the framework of this project was created using a Botrytis cinerea strain which was grown under conditions of nitrogen deprivation, which is the normal alituation for B. cinerea during its development on its host plant. The library was produced in an oriented direction, in the pBSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLN 02-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Allisod. 1 GI:5829623
CDNA library; nicrogen deprivation.
Borryocinia fuckeliana
Borryocinia fuckeliana
Borryocinia fuckeliana
Eukaryoca; Fungi; Ascomycota; Pezizomycotina; Leotiomycetes;
Helotiales; Sclerotiniaceae; Borryotinia.
1 (bases 1 to 660)
Direct Submission
2 Submitted (01-SEP-1999) Phytopathologie, INRA, route de St Cyr,
78026 Versailles; France
2 (bases 1 to 660)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cyr,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     660 bp mRNA linear PLN 02.
Borrytis cinerea strain T4 cDNA library under conditions of
AL115004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db xref="taxon:40559"
/noTe="Genoscope sequence ID : W57B021"
203 c 145 g 154 t
                                                                                                                                                                                                                                                     : W21F101"
                                                                                                                                                                                                                                                                                                                                       660
10
3
5
0
                                                                                                                                                               1...660
/organism="Botryotinia fuckeliana"
/mol_type="mRNA"
/strain="rq"
/db_xref="taxon:40559"
/note="Genoscope sequence ID : W21F
na 203 c 144 g 154 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .660
/organism="Botryotinia fuckeliana"
/mol_type="mRNA"
/strain="T4"
                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-081-935-2 (1-18) x CNS01B92 (1-660)
                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                       13.6
48.00
72.22
55.56
58.54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    158
                                                                                                                                        vector.
                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                        Query Match:
DB:
                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                         ..
No..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
CNS01C2S
LOCUS
     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
```

ð

```
696 bp mRNA linear PLN 03-SEP-1999 Botrytis cinerea strain T4 cDNA library under conditions of ALLIS856 ALLIS856 CDNA library LONA LIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage: CP 5706 91057 EVRY cedex - FRANCE (E-mail: seqref@genoscope.cns.fr - Web: www.genoscope.cns.fr)

The CDNA library to be analyzed within the framework of this project was created using a Botrytis cinerae strain which was grown under conditions of nitrogen deprivation, which is the normal situation for B. cinerae during its development on its host plant. The library was produced in an oriented direction, in the pBSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                БОТТУТІВ Cinerea strain T4 cDNA library under conditions of nitrogen deprivation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (01-SEP-1999) Phytopathologie, INRA, route de St Cyr, 78026 Versailles, France
2 (bases 1 to 696)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Moral library, intergen deprivation.

Botryotinia fuckeliana
Botryotinia fuckeliana
Botryotinia fuckeliana
Bukaryota, Fungi, Ascomycota, Pezizomycotina, Leotiomycetes, Helotiales; Sclerotiniaceae; Botryotinia.

1 (Basea I to 656)
Bitcon, F., Levis, C., Fortini, D., Pradier, J.M. and Brygoo, Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                     1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:40559"
/note="Genoscope sequence ID : W32D051"
216 c 142 g 164 t
    660
10
5
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    696
10
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .696
//organism="Botryotinia fuckeljana"
//mol_type="mRNA"
/strain="T4"
Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                    Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL116822
AL116822.1 GI:5832038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
```

: W15F041" 1 others

697 3 3 0 0

```
Direct Submission
Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage :
CP 5706 91057 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)
The cDNA library to be analyzed within the framework of this project was created using a Botrytis cinerea strain which was grown under conditions of nitrogen deprivation, which is the normal situation for B. cinerea during its development on its host plant.

The library was produced in an oriented direction, in the pBSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CNSO1AOB 720 bp mRNA linear PLN 02-SEP-1999
Botrytis cinerea strain T4 cDNA library under conditions of
nitrogen deprivation.
AL111187
   The library was produced in an oriented direction, in the pBSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (01-SEP-1999) Phytopathologie, INRA, route de St Cyr,
78026 Versailles, France
                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Fungli Ascomycota, Pezizomycotina, Leotiomycetes, Helociales, Sclerotiniaceae, Botryotinia.
1 (bases 1 to 720)
81tcon, F., Levis, C., Fortini, D., Pradier, J.M. and Brygoo, Y. Direct Submission
                                                     1. .697
/organism="Botryotinia fuckeliana"
/orlype="mRNA"
/straf="T4"
/db_xref="taxon:40559"
/noTe="Genoscope sequence ID : W15FC
/n a 219 c 151 g 149 t 1 c

    .720
    .720 forganism="Botryotinia fuckeliana"
/mol_type="mRNA"
/strain="T4"

                                                                                                                                                                                                                                                 Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL11187.1 GI:5827806
CDNA library; nitrogen deprivation.
Botryotinia fuckeliana
Botryotinia fuckeliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:40559"
/note="Genoscope sequence
221 c 145 g 174
                                                                                                                                                                                                                                    Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-2 (1-18) x CNS01BOR (1-697)
                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                  14.3
48.00
72.22%
55.56%
58.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 720)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14.8
48.00
72.22
55.56
58.54
                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoscope
                                                                                                                                                              177
                       vector.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                  Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CNS01AOB
                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rocus
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                         Botrytis cinerea strain T4 cDNA library under conditions of AL114499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission Submission Submitted (01-SEP-1999) Genoscope - Centre National de Sequencage : CP 5706 91057 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)
The cDNA library to be analyzed within the framework of this project was created using a Botrytis cinerea strain which was grown under conditions of nitrogen deprivation, which is the normal situation for B. cinerea during its development on its host plant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALITY 199.1 GI:5829118
CDNA library, nitrogen deprivation.
BORTYOTINIA fuckeliana
BORTYOTINIA fuckeliana
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Leotiomycetes;
Helotiales; Sclerotiniaceae; Botryotinia.
1 (bases 1 to 69.2)
Bitton, F., Levis, C., Fortini, D., Pradier, J.M. and Brygoo, Y.
Direct Submission
1 Submitted (01-58P-1999) Phytopathologie, INRA, route de St Cyr,
78026 Versailles, France
                                                                                                                                 Submitted (01-SEP-1999) Phytopathologie, INRA, route de St Cyr, 78026 Versailles, France 2 (bases 1 to 696)
                                                 Eukaryota; Fungi; Ascomycota; Pezizomycotina; Leotiomycetes; Helociales; Sclerotiniaceae; Botryotinia.
1 (bases I to 696)
Bitcon, F., Levis, C., Fortini, D., Pradier, J.M. and Brygoo, Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : W44G081"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        696
110
5
0

    696
    70cganisma="Botryotinia fuckeliana"
/mol_type="mRNA"
/strain="T4"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:40559"
/note="Genoscope sequence ID
212 c 148 g 161 t
cDNA library; nitrogen deprivation.
Botryotinia fuckeliana
Botryotinia fuckeliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18) x CNS01DHA (1-696)
                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14.3
48.00
72.22%
55.56%
58.54%
                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity:
Query Match:
                                                                                                                                                                                          Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                           vector.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
02
.
                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNS01BOR
                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
```

ઠે 8 : W59D122'

t ID

```
5755 CTCCAATTTACAAGGATATTACTGACTTTAGTATCTGCAGGAATGGCCAGT 5805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                           ACCESSION
                                        RESULT 15
                                                              AC130471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission

Submitted (15-SEP-1999) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA Direct Submission

Direct Submission

Signature (10-MAR-2002) Production Sequencing Facility, DOE Joint Genome Institute.

La Change of Carlot Genome Institute and Stanford Human Genome Center.

Canome Institute and Stanford Human Genome Center.

Direct Submission

La Submitted (01-UUL-2002) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA

Submitted (01-UUL-2002) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA

Sobe Joint Genome Institute and Stanford Human Genome Center.

Direct Submission

Submitted (16-UUL-2002) DOE Joint Genome Institute, 2800 Mitchell Submitted (16-UUL-2002) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA

Submitted (16-UUL-2002) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA

On Jul 16, 2002 this sequence version replaced gi:21637453.

Draft Sequence Produced by DOE Joint Genome Institute
                                                                                                                                                               PRI 16-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   www.jgi.doe.gov
Pinishing Completed at Stanford Human Genome Center
www.shgc.stanford.edu
www.shgc.stanford.edu
www.shgc.stanford.edu
www.shgc.stanford.edu
www.shgc.stanford.edu
www.shgc.stanford.edu
www.shgc.stanford.edu
BEtimated Total Number of Errors is 0.
NOTE: This insert is not the entire sequence of the clone (entire
sequence is 145.4kb). It is clipped at the overlap with AC008955.
The number of bases overlapped is 9996.
                                                                                                                                                                                                                                                                                     Homo sapiens
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                            Homo sapiens chromosome 5 clone CTC-298B17, complete sequence. AC010228.8 GI:21844555
                                                              1 (bases 1 to 78680)
DOE Joint Genome Institute and Stanford Human Genome Center
                                        1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="CTC-298B17"
14896 c 13749 g 23603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. 78680
/organism≂"Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="genomic_DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-2 (1-18) x AC010228 (1-78680)
US-10-081-935-2 (1-18) x CNS01AOB (1-720)
                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished 78680)

C (bases 1 to 78680)

DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.746+03
                                                                                                                                                                                                                                                                  Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48.00
82.35
52.94
58.54
                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                          RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                           AC010228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                               rocns
```

```
Consensus quality: 146731 bases at least Q40
Consensus quality: 146937 bases at least Q30
Consensus quality: 146937 bases at least Q30
Consensus quality: 147107 bases at least Q30
Estimated insert size: 0; null estimation
Estimated insert size: 147808; sum-of-contigs estimation
Quality coverage: 2.147836E7 in Q20 bases; null estimation
Quality coverage: 30.25 in Q20 bases; null estimation

* NOTE: This is a 'working draft' sequence. It currently
* consists of 3 configs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* truns of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
AC130471 148008 bp DNA linear HTG 10-AUG-2002
Homo sapiens chromosome 5 clone RP11-420M3, WORKING DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (10-AUG-2002) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
                                                                               AC130471 GIS2201244
AC130471.1 GIS2201244
HTG; HTGS PHASI; HTGS_ACTIVEFIN.
Home sapiens (human)
Home sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Home.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 1000: contig of 1000 bp in length
11 1100: gap of unknown length
1 2353: contig of 1253 bp in length
14 2453: gap of unknown length
14 148008: contig of 145555 bp in length.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone lib="RPCI human BAC library 11" 50050 a 27259 c 25106 g 45393 t 200 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .148008
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                       1 (bases 1 to 148008)
DOE Joint Genome Institute.
Sequencing of Human Chromosome 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----Genome Center
Center: Joint Genome Institute
Center Code: JGI
Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Project Information
Center Project Name: 567936
Center clone name: RPCI-11_420M3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x AC130471 (1-148008)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic_DN/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /chromosome≂"5"
/clone="RP11-420M3"
                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
2 (bases 1 to 148008)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.31e+03
48.00
82.35%
52.94%
58.54%
                                                             unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
```

```
L. (Dases 1 to 1,21,4)

Bitren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M., Baldwin, J., Barna, N., Beckerly, R., Boguslavkiy, L., Boukhgalter, B., Brown, A., Castle, A., Colangelo, M., Collins, S., Collymore, A., Cooke, P., Derellano, K., Dewar, K., Domilno, M., Donelan, L., Doyle, M., Ferreira, P., Fitzhugh, W., Forrest, C., Funke, R., Gage, D., Galagan, J., Gardyna, S., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Johnson, R., Jones, C., Kann, L., Karates, A., Klein, J., Lehoczky, J., Lieu, C., Locke, K., Macdonald, P., Marquis, M., McEwan, P., McGurk, A., McMann, L., Karates, A., Klein, J., Lehoczky, J., Uslor, C., Locke, K., Macdonald, P., Marquis, M., Pollara, V., Riley, R. Roy, A., Santos, R., Severy, P., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talanas, J., Wyman, D., Ye, W.J., Zimmer, A. and Zody, M.

All repeats were identified using Repeatmasker:

All repeats were identified using Repeatmasker:

Smit, A.F.A. & Green, P. (1996-1997)

http://ftp.genome.washington.edu/RM/Repeatmasker.html
                                                                                                                                                  AC011783 LOM-PASS SEQUENCE SAMPLING. AC011783
                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 175178)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ------ Genome Center
Center: Whitehead Institute/ MIT Center for Genome Research
                                                              1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of 916 bp in length gap of 100 bp in length contig of 877 bp in length gap of 100 bp in length gap of 100 bp in length gap of 100 bp in length contig of 976 bp in length
                                                                                                                                                                                                                                                                                                                                                                                 Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens, clone RP11-16L10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOTE: This record contains 185 individual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center code: WIBR
Web site: http://www-seg.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of 100 bp
contig of 934 b
gap of 100 bp
US-10-081-935-2 (1-18) x AC011421 (1-148142)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig of
gap of 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center project name: L3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center clone name: 16_L_10
                                                                                                                                                                                                                                AC011783.3 GI:7144945
                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 175178)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1893:
1993:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2899:
2999:
3975:
                                                                                                                                                                                                                                                    HTG; HTGS PHASE0.
Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4075:
5009:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5109:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the recordis
                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   917
1017
11894
1994
2900
3000
3976
4076
                                                                                                                                            AC011783/c
LOCUS
                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                            RESULT 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                            AC011421 18-APR-2000
Homo sapiens chromosome 5 clone CTD-230305, complete sequence.
AC011421
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (06-OCT-1999) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA 1 (bases 1 to 148142)
DOE Joint Genome Center and Stanford Human Genome Center.
                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
Submitted (23-OCT-1999) DOE Joint Genome Institute, 2800 Mitchell
Drive, Walnut Creek, CA 94598, USA
4 (bases 1 to 148142)
DOE Joint Genome Institute and Stanford Human Genome Center.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (01-FEB-2000) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA 5 (bases 1 to 148142)
DOE Joint Genome Institute and Stanford Human Genome Center.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 (bases 1 to 148142)

Dioc Joint Genome Institute and Stanford Human Genome Center.

Direct Submission

Submitted (18-APR-2000) DOE Joint Genome Institute, 2800 Mitchell

Brive, Walnut Creek, CA 94598, USA

On Oct 23, 1999 this sequence version replaced gi:6013521.

Draft Sequence Produced by DOE Joint Genome Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (02-FEB-2000) DOE Joint Genome Institute, 2800 Mitchell
Drive, Walnut Creek, CA 94598, USA
                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 148142)
DOE Joint Genome Institute and Stanford Human Genome Center.
             www.jgi.doe.gov
Finishing Completed at Stanford Human Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148142
9
5
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       www-shgc.stanford.edu
Quality: Phrap Quality >=40 99.9% of Sequence;
Estimated Total Number of Errors is 0.1.
STS Content:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="CTD-230305"
26865 c 24848 g 45853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 148142)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /chromosome="5"
                                                                                                                                                                                                        AC011421.2 GI:6102634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.31e+03
48.00
82.35%
52.94%
58.54%
                                                                                                                                                                                                                                                  Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .148142
                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G06342,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WI-6744 G05721
                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WI-6988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .. No. .
                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                    RESULT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                        AC011421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
```

bp in length

																																•					
length	length		length	length	length	length	length	length	length	length	length	i	length	length	length	length	Φ	length	length	length	length	length	length	length	length	length	length	length	length	length							
<b>.</b>	in		r.	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	
	o Pp	í,	d G	d b	j. pp	1 Ծ	p 4 bp	g S S	4 bp		р 9 рр	р 7 bp	р 9 bр	р 5	o S	o S D		р в Ър	dq o	р 2 bр	g 9 9	p 7 bp	dq 6	g D	dq e	р 9 р	d o	d d	д Э.б	d d	o S S D D	g a b	р 7 Ър	a b b	a D	dq c.s	0
4 6	) 	8	<u>۔</u> و	44 6	S 44 1	<b>.</b>	00 F	84	6	8	841	8 4 3	Э ч	848	3 44	8	6	00 F	84	846	9	6	9	3 4 6	2	2	3 4 6	946	246	5 4 6	941	E OO	6	T OO	00 J	100 bp of 925	8
ontig en of	ap or ontig	ap of	ontig ap of	ontig	ap or ontig	ap or ontig	ap of ontig	ap or ontig	ap of ontig	ap or ontig	ap of ontig	ap of ontig	ap ot ontig	ap of ontig	ap of ontig	ap or ontig	ap of ontig	ap of ontig	ap or ontig	ap or	ap or ontig	ontig	ontig	ap or ontig	ap or ontig	ap or ontig	ap of ontig	ap of ontig	ap or ontig	ap of ontig	بر <u>ق</u>	ap of					
4 4	075	175	110	126	0157	0257 1178	1278 2202	2302 3218	3318	4352 5290	5390 6319	6419 7356	7456 8374	9399	0434	0534 1209	1309	2335 3293	3393 4333	5365	5465 6394	7441	7541	9468	0504	1513	2552	3586	4615	5640	6676	7684	7784 8781	9829	9929	41882:	1982
7 5	15	0	17	22	922	015	117 127	230	321	425 435	529	632	745	837 847	950	043 053	121	223	339 339		546	649	754	854	926	060	161	265	368	471	574	677	778	888	993	10958	188

• • •	42919	43018:	gap of	ō w ō	dq	in	length
	404	4043	ap o	00 p	ďq	in	length
* *	499 509	5094 6032	ap o	00 p	g	 	length
	603	6132	ap o	Q 00			•
	706	7063	onti	t 93	ci Gi	r r	length
	716	8113	onti	f 95	ď	'n	length
	821	916	onti	ຸດີ	dq	ü	length
	976	9262	ap o onti	00 E	ďq	пí	length
	016	0266	ap o	00 b		in	length
	119	1289	ap o	00 p		1	, ,
	221	2312	ap o	Q 00	2.	=	הואר
• •	231	3209	ontio ap o	f 89 00 b	ď	.d	length
	331	4254	onti	f 94	ďq	in	length
	435	5298	ontio	f 94	dq	in	length
* *	529 539	5398 6307	ap o	00 p	qq	'n	length
	630	6407	ap o	00			1
*	732	7425	ap o	, o			,
	742 836	8366	onti	r 94 00 b	ď	5	length
	846	9390	onti	£ 92	dq	пi	length
	949	0416	ap o	100 E	dq	in	length
• •	041	0516	ap o	00 b	qq	in	length
	146	1562	ap o	Q 00	<b>.</b>		
	156	2510 2610	onti	t 94 00 b	ďď	בו	length
	261	3538	onti	£ 92	đq	in	length
	363	3638 4574	ap o onti	6 4	dq	in	length
	457	4674	ap o	00 b	ć.		Jength
	561	5713	ap o	00	L		9
	571	6625	onti	t 91 00 b	ď	r r	length
	672	7636	onti	f 91	dq	in	length
	773	8689	ontio	6	ďq	in	length
	869	8789	ap o	00 b	2	5	lengt h
	973	9834	ap o	900			
	983	0735	onti	90	c d	E C	length
	083	1771	onti	6	gq	'n	length
	177	1871	ap o	00 P			Jonath
	282	2919	ap o	00 P	2. 2.	=	Į.
•	292	3902	onti	£ 98	pb i	in	length
	400	4002	ap o onti	8	bp.	in	length
cores	 8						
		. 93	<b>⊢</b> 2	ength:			175178
lari	ty:	82.35	. 0 2	onser	tiv	 a)	v <b>ru</b> r
	1	, ri	E H O	ndels: aps:	מ ע		100
35-2	(1-18)	x AC011783	3 (1-175	178)			

```
/product="transcription elongation factor Grea"
/protein_id="AAK45367.1"
/db_xref="fu1:13880692"
/translation="wWDTQVTWLTGESHDRLKAELDQLIANRPVIAAEINDRREEGDL
RENGGYHAAREEGGQQEARIRQLQDLLSNAKVGEAAKQSGVALPGSVVKVYYNGDKSD
SETFLIATRQEGVSDGKLEVYSPNSPLGGALIDAKVGETRSYTVPNGSTVSVTLVSAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="identified by Glimmer2; putative"
/codon start=1
/transI table=11
/product="hypothetical protein"
/protein id="ARK45568.1"
/db_xref="GI:13880693"
/translation="MHPAGVNPGMTHTPIPRPDARYGRPRLSRRARRRVAIALGVLVA
                                                             Mycobacterium tuberculosis CDC1551
Mycobacterium tuberculosis CDC1551
Bacteria: Actinobacteria; Actinobacteridae; Actinomycetales;
Bacteria: Actinobacteria; Actinobacteridae;
Corynebacterinaes; Mycobacteriaceae; Mycobacterium; Mycobacterium
tuberculosis complex.

1 (bases 1 to 14483)
Fleischmann, R.D., Alland, D., Eisen, J.A., Carpenter, L., White, O.,
Fleischmann, R.D., Alland, D., Eisen, J.A., Ermolaev, M., Kolonay, J.F., Nelson, W.C., Umayam, L.A., Ermolaeva, M.,
Salaberg, S.L., Delcher, A., Utterback, T., Weidman, J., Khouri, H.,
Mhole genome comparison of Mycobacterium tuberculosis clinical and
laboracory strains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGIVIAVIGYQRISTSAVTGSLVGYRLVDDETASVTISVTRSDPSRPVACIVRVRAT
NGSETGRRELLVPPSEATTVQVTTTVKSSQPPVMADVYGCGTEVPSYLRLP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /transl_cable=11
/product="lmbE procein"
/protein_id="AaK45369.1"
/db_xref="G1:13880664"
/translation="MSELRLMAVHAHPDDESSKGAATLARYADEGHRVLVVTLTGGER
                                                                                                                                                                                                                                                                                                                                    Unpublished

(bases 1 to 14483)

(closes 1 to 14483)

Fleischmann, R.D., Alland, D., Eisen, J.A., Carpenter, L., White, O., Peterson, J., DeBoy, R., Dodson, R., Gwinn, M., Haft, D., Hickey, E., Kolonay, J.F., Nelson, W.C., Umayam, L.A., Ermolaeva, M., Salzberg, S.L., Delcher, A., Utterback, T., Weidman, J., Khouri, H., Gill, J., Mikula, A. and Bishai, W.

Direct Submission

Submitted (25-APR-2001) The Institute for Genomic Research, 9712

Medical Center Dr. Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="similar to PID:699274; identified by sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to SP:P21346; identified by sequence similarity; putative" /codon start=1 /transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mycobacterium tuberculosis CDC1551"
/mol type="genomic DNA"
/strain="CDC1551"
/db xref="taxon:8333"
/note="clinical strain"
/complement(66. .560)
/gene="MT1111"
/gene="MT1111"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="MT1112"
complement(746. .1207)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (746. .1207)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            similarity; putative"
  AE006992 AE000516
AE006992.1 GI:13880691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .282. .2148
gene="MT1113"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1282. .2148
/gene="MT1113"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="MT1112"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .14483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PYHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
    ACCESSION
                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene="PACE4"
| Gene="PACE4"
| Gene="PACE4"
| Godon start=1 |
| Prodouct="proprotein convertase PACE4"
| Protein id="CAB65907.1"
| Gbratein id="CAB65907.1"
| Ab xref="G1:6706188"
| Aranslation="HYWSHFYGFCLGDAEAIVVEAKKWRTWPPQHVCVGSLDRVPKYI
| RPDHVLRASTLSSACSEQREQHVLYLEHVVVRLSIAHPRRGDLQISLVSPAGTRSQLL
ARRVFDHSNEGFKGWEFMTVHCWG"
                                                                                                                            16-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NA linear BCT 27-APR-2001
section 78 of 280 of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 377)
Feldmann,A.
Direct Submission
Submitted (08-JAN-2000) Feldmann A., Institut fuer Virologie,
Philipps Universitaet Marburg, Robert-Koch-Str. 17, 35037 Marburg,
GERMANY
                                                                                                                                   Gallus gallus partial mRNA for proprotein convertase PACE4 (PACE4 AJ252171
                                                                                                                                                                                                                                                                               Eukaryoča; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                                                       Feldmann, A., Schafer, M.K., Garten, W. and Klenk, H.D. Targeted infection of endothalial cells by avian influenza virus A/FPV/Rostock/34 (H7N1) in chicken embryos
J. Virol. 74 (17), 8018-8027 (2000)
                        1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
9 4
0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                          mRNA
                                                                                                                                                                                                     AJ252171.1 GI:6706187
PACE4 gene; proprotein convertase PACE4
Gallus gallus (chicken)
Gallus gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Gallus gallus"
/mol_type="mRNA"
/db_xref="raxon:901"
/clone="chPACE"
/tisuc_type="liver"
/dev_stage="li-day-old"
/country="Germany"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE006992 14483 bp D?
Mycobacterium tuberculosis CDC1551,
complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                        377 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18) x GGA252171 (1-377)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .377
/gene="PACE4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            107 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.9
47.00
72.22%
50.00%
57.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity:
                                                                                                                        GGA252171
                                                                                                                                                                                                                                                                                                                                                                                                                                                      20392157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10933711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match:
DB:
                                                                              RESULT 18
GGA252171/c
                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Source
                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE006992
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
```

CDS

CDS

```
/trānslation="MEIIPPRLKEPLYRLYELRRQGLAASKSDLPRHIAVLCDGNRR WARSAGYDDVSYGYRMGARIAEMIRWCHBAGIELATVYLLGTENLCRBPDELAALIE ITDVVEEICAPAHWSVRYUGDCLIGEPARRLRGAVESTPEVASFHVNVAVGYGG RREIVDAVRALLSKELANGATAEELVDAVTWGIS:WLYTSGOPDPDLVIRTSGEORL SGFLLWQSAYSEMWFTEAHWPAFRHVDFLRALRDYSARHRSYGR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67200 bp DNA linear BCT 02-SEP-2002 Mycobacterium tuberculosis H37Rv complete genome; segment 48/162. AL021897 1 GI:3256022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MPCVGYGDRREFVDAVAVEAICENLNTSGQPDPDLVIRTSGEQR
LSGHRGPTGGVSRRRLLRALRDYSTPHASIPYVPPPYRSDGIHASRLAVESVFDALAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tränslation="MGKGLRMSYMIATPAALTAAATDIDGIGSAVSVANAAAVAATTG
VLAAGGDEVLAAIARLFNANAEEYHALSAQVAAFQTLFVKTLTGGCGVFRRRGRQCV
TAABHRAAGAGRRQRRRRSGDGQWRLRQQRHFGCGGQPEFRQHSEHRR"
                                                                                                                                                                                                                                /gene="MT118.1"
/note="similar to GB:AL123456; identified by sequence
similarity; putative"
similarity; putative"
/gene="MT118.2"
8768. ;908
/gene="MT118.2"
/note="MT118.2"
/rote="identified by Glimmer2; putative"
/trans1_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="similar to GB:AL123456; identified by sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="similar to GB:AL123456; identified by sequence
  /transl_table=11
/product="undecaprenyl diphosphate synthase"
/protein id="A45374.1"
/do_xref="GI:13880699"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14483
9
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /producT="hypothetical protein"
/protein_id="AAK45375.1"
/db_xref="GI:13880700"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transI_table=11
/product="PE family protein"
/protein_id="AAK45377.1"
/db_xref="GI:13880702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="PE family protein"
/protein_id="AAK45376.1"
/db_xref="GI:13880701"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18) x AE006992 (1-14483)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        similarity; putative"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        similarity; putative"
/codon start=1
/transT table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9692. .9859
/gene="MT1120"
9692. .9859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="MT1119"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9<u>2</u>23. .9675
/gene="MT1119"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="MT1120"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9223. .9675
                                                                                                                                                                                                                   6283. .8591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92.86%
64.29%
57.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RVEL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 20
                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / procein_id="AAK45311.1"
// db xref="G1:13880656"
/ trainslation="WSPANPSGTNILALTSPYLRQHADNPVHWQQWTPQALAEAAAR
/ trainslation="WSPANPSGTNILALATSPYLRQHADNPVHWQQWTPQALAEAAAR
/ trainslation="WSPANPSGTNILALATSPYLRQHADNPVHWQQWTPQALAEAAAR
AVPTLLSVGYAACHWCHYMAAHESFDDDEVAAAMNAGFVCIKVDREERPDIDAYYMNAT
VALTGOGGOMPMTCELTPNGRBFFCGTYYPKAAFLQLLSAISETWRERRAEVEQASDHI
AAELRSWASGLPGGFBEVARFCIEDDAVAGVLREQDTAHGGFGGAPKPPPSALLBALMR
HYBETRSPAALEAVARTGANAGGTYYDQLGGGGFARYSVDGGAWVVPHEKMILYDNALL
LRAYAHWARTGDDELARRVAAQTARFLLDELGSKAPADMFTSSLDADADGREGSTYVW
TPVQLITEVLGGDGGRWAAEVFGYTEAGTFEHGTSVLQLADADGRARLDRYXAALLVA
RLARAQPARDDKVYTSWNGGIAJTALAEASVALDDPALAHAARRCATRLLDLHVVDGRL
RRASLGGVVGDSAAILEDHAMLATGLLALYQLTSEGAWLTAATGLLDTAVAHFGDPQR
PGRWPDTADDARRMLRYBDRDATSGTSTALLTAGHVVDGRL
RRASLGGVVGDAAILEDHAMLATGLLALYQLTSEGAWLTAATGLLDTAVAHFGDPQR
PGRWPDTADDARRMLRYBDRATGLALYGGTSSLALADARRRYWQLAAD
TLAAHAVLLARAPRSAGHMLAVAEAVVRGPLQIAVACDLPRSSLLADARRLAPGGGIV
                                                                                                                                                                                                                                                        /translation="MGGQADTATTABARTPAHAAHHLVBGVARVLTKPRFRGWIHVYS
AGTAVLAGASLVAVSWAVGSAKAGLTLAYTAATITMFTVSATYHRVYWKSATARNWM
KRADHSMIFVFIAGSYTPFALLALPAHDGRVVLSIVWGGAIAGILLKMCWPAAPRSVG
VPLYLLLGWVAVWYTATILHNAGVTALVLFVGGALYSIGGILYAVRWPDPWPTTFGY
                   CFARVPLEVSTEALVRVVREFRPHVMTTYDENGGYPHPDHIRCHOVSVAAYEAAGDFC
RFPDAGEPWTVSKLYYVHGFLRERMOMLQDEFARHGORGPFEOWLAYWDPDHDFLTSR
VTTRVECSKYFSQRDDALRAHATQIDPNAEFFAAPLAWGERLWPTEEFELARSRIPAR
GEILNPAMDLPDVHGRIAEIRRDEMTKAAEILGVEHTWLGFVDSGLPKGDLPPPLPDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                429. .4548

/gene="MT1116"

/note="identified by Glimmer2; putative"

/codn start=1

/transI_table=1

/product="hypothetical protein"

/product="hypothetical protein"

/broduct="hypothetical protein"

/db_xref="Gl:13886697"

/translation="MAPVHREIRDAVSACRVAIFTLATALGVPGONTTNHIAM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similar to SP:P20182 PID:1196916; identified by sequence similarity; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /noce="similar to PID:887849 GB:U00096 PID:1789266;
identified by sequence similarity; putative"
/coderate1
/transl_table=11
/produce="HIY-III family protein"
/protein id="AAK4573.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transI_table=11
/product="conserved hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                2398. .4419
/gene="MT1115"
2396 .4419
/gene="MT1115"
/noce="identified by Glimmer2; putative"
                                                                                                                                                                                                          'note="identified by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HEFFHACTAVAAICHYIAMWFVVF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (4518. 5246)
                                                                                                                                                                                                                   ...don start=1
/transl rat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4429. .4548
/gene="MT1116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene="MT1117"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3357. .6145
/gene="MT1118"
                                                                                                                   2145. .2411
/gene="MT1114"
                                                                                                                                                                2<u>1</u>45. .2411
/gene="MT1114"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="MT1117"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="MT1118"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence simila
/codon_start=1
                                                                                           PPETELFAGIEP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4429.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5357.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
```

CDS

CDS

SOS

```
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                            Sgo
                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                     RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         been renumbered from the original cosmid submissions but the old gene designations are in brackets after the new gene numbers. Gene prediction was based on a Hidden Markow Model of TB genes implemented in TBparse (Krogh) supplemented with visual inspection of positional base preference in codons, especially where there is an increase in the observed/expected third position G + C. CAUTION: In some cases we may not have predicted the correct initiation codon. Where possible we choose an initiation codon (atg, gtg, or ttg) which is preceded by an upstream ribosome binding site sequence (Optimally 5-13bp before the initiation codon). If this cannot be identified we choose the most upstream
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (11-JUN-1998) Submitted on behalf of the Mycobacterium Submitted (11-JUN-1998) Submitted on behalf of the Mycobacterium tuberculosis sequencing and mapping teams, Sanger Centre, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 15A Unite de Genetique Moleculaire Bacterienne, Institut Pasteur, 28 rue du Docteur Roux, 75724 Paris Cedex 15, France E-mail: parkhill@sanger.ac.uk
On Jun 26, 1998 this sequence version replaced gi:2896684.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cole, S.T., Brosch, R., Parkhill, J., Garnier, T., Churcher, C., Harris, D., Gordon, S.V., Eiglmeier, K., Gas, S., Barry III, C.E., Tekaia, F., Badcock, K., Basham, D., Brown, D., Chillingworth, T., Connor, R., Davies, R., Devlin, K., Feltwell, T., Gentles, S., Connor, R., Davies, R., Devlin, K., Feltwell, T., Gentles, S., Hamlin, N., Holroyd, S., Hornsby, T., Jagels, K., Krogh, A., McLean, J., Moule, S., Murphy, L., Oliver, S., Osborne, J., Quail, M.A., Rajandream, M.A., Rogers, J., Rutter, S., Seger, K., Skelton, S., Squares, S., Sqares, R., Sulston, J.E., Taylor, K., Whitehead, S. and Barrell, B.G.

Beciphering the Secondary of Mycobacterium tuberculosis from the community of the secondary of Mycobacterium tuberculosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Details of M. tuberculosis sequencing at the Sanger Centre are available on the World Wide Web.

(URL, http://www.sanger.ac.uk/Projects/M tuberculosis/) CDS have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Complete genome sequence Nature 393 (6685), 537-544 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mycobacterium tuberculosis H37Rv Mycobacterium tuberculosis H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Parkhill,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98295987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tuberculosis complex.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterium; Mycobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 67200)
/note="Rv1049, (MTV017.02), len: 148. Probable repressor similar to many e.g. P74870 (149 aa). FASTA scores: sptr|P74870|P74870NEGATIVE REGULATOR OF EMR LOCUS EMR (149 aa) opt:146 z-score: 200.3 E(): 0.0011; 31.6% identity in 95 aaoverlap. TBparse score is 0.892. Contains probable helix-turn-helix motif at aa 58-79 (Score 1495, +4.28 SD)"
                                                                                                                                                                                                                                      /gene="Rv1049"
184. .630
                                                                                                                                                                                                                                                                                                                                                                                            /note="fragment
physical clone"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mycobacterium tuberculosis H37Rv"
/mol_type="genomic DNA"
/strain="H37Rv"
                                                                                                                                                                                                    /gene="Rv1049"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:83332"
/clone="Y22G8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            strain="H37Rv"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Mycobacterium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .67200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    xref="taxon:83332"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .66170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       type="genomic DNA"
                                                                                                                                                                                                                                                                                                         ="possible
.630
                                                                                                                                                                                                                                                                                                                                                                                                                       designated v017.
                                                                                                                                                                                                                                                                                                                             ggag,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tuberculosis H37Rv"
                                                                                                                                                                                                                                                                                                                             for Rv1049
                                                                                                                                                                                                                                                                                                                                                                                                                Does not represent a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RBS
```

```
/gene="Rv1052"
3521. 3910
/gene="Rv1052"
/gene="Rv1052"
/gene="Rv1052, (MTV017.05), len: 129. Un
/codon start=1
/transI_table=11
/producT="hypothetical protein Rv1052"
/protein_id="CAA17168.1"
/db_xref="SPTREMBL:053400"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="hypothetical protein Rv1051c"
/product="hypothetical protein Rv1051c"
/protein id="CBA17167.1"
/db_xref="GI-ZB96688"
/db_xref="GI-ZB95688"
/db_xref="GI-ZB95688"
/db_xref="GI-ZB95688"
/db_xref="GI-ZB95688"
/db_xref="GI-ZB95688"
/translation="MRADVTAEHLTQVVRDIAVIDIDDGVAFNLDTSSVQEIRERADY
/translation="MRADVTAEHLTQVVRDIAVIDIDDGVAFNLDTSSVQEIRERADY
PGLRVRVAMSVGPWQGIAAWDVSTGEPIAPWTTVTTDRILGEPITLLGYAPETIIAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           similar to protein encoded by Lactococcus lactis plasmid pNP40, LLU36837 2 (298 aa). FASTA scores: U36837|LLU36837-2 Lactococcus lactisplasmid pNP40, (298 aa) opt: 194 z-score: 245.5E(): 3.5e-06; 30.3% identity in 155 aa overlap. TBparse score is 0.912. Contains possible helix-turn-helix motif at aa197-218 (Score 1097, +2.92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
/product="hypothetical protein Rv1050"
/protein_id="CAA17166.1"
/protein_id="CAA17166.1"
/db_xref="G1:2896687"
/db_xref="G1:2896687"
/db_xref="MARORFRDQVVLITGASSGIGEATAKAFAREGAVVALAARREGA
/translation="MARORFRDQVVLITGASSGIGEATAKAFAREGAVVALAARREGA
/krvaneletion="MARORFRDQVVLITGASSGIGEATAKAFAREGAVVALAARREGA
LRRVAAFLDGTREMUEIDYLGTVREVUREVLPIMKQQRSGRIMNMSSVVGRKAFAREAGYSS
AMHAIAGFSDALRQELRGSGIAVSVIHPALTQTPLLANVDPADMPPPFRSLTPIPVHW
VAAAVLDGVARRARVVVPFQPRLLMVGDAFSPRYGDRVVRLLESKIFGRLIGSYRGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SD) *
                                                               /translation="MDCCEERGVARHKGLSQVGTPGCPRWSQAVSCRCSAYREAAVTA
VQMPLTPGYGETPLPHDELAALLPEVVEVLDKPITRADVYDLEQGLQDQVFDLLMPTA
VEGSLSLDELLSDHFVRDLHARMFGPV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Rv1050, (MTV017.03), len: 301. Probable oxidoreductase similar to many e.g. MTCY48.22C(341 aa). FASTA scores:sp[010783|Y04M_MYCTU PUTATIVE OXIDOREDUCTASE CY48.22C (341aa) opt:462 z-score: 533.9 E(): 3e-22; 33.6% identity in265 aa overlap. TBparse score is 0.896"
/gene="Rv1053c"
                                   complement (3809.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3507.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIGPASFTLGRRVVYRRDEVSRWISKRESATRR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KGVTILERGITSTRWRDYVDIVQLDRRGIDDDELLRSARAVAQYRGATLEPVAPHLAG
YGAVAQAKWATEHGRCQHCWRHWKPAHVGRRNMDLLDAKQVSEMIGVPVGTLRHWRHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="Rv1051c"
/note="Rv1051c, (MTV017.04c), len: 251. Unknown but
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (1743. .2498)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (1743. .2498)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VYRHQPTESAKAQAAQPERGYSSAR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Rv1050"
679. .1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="possible 679. .1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MGKGAAFDECACYTTRRAARQLGQAYDRALRPSGLTNTQFSTLAVISLSEGSAGIDLTWSELAARIGVERTLTRNLEVMRRDGLVRVMAGADARCKRIELT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transl_table=11
/product="hypothetical protein Rv1049"
/protein_id="CAA17165.1"
/db_xref="01:2896686"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="possible RBS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="Rv1051c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AKGRAALQKAVPLWRGVQAEVTASVGDWPRVRRDIANLGQAAEACR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="Rv1050"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="SPTREMBL:053397"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       table=11
                                                                                                                                                                                                                                                                                                                                                                (MTV017.05), len: 129. Unknown"
                                   .4084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aaggtgg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aggag, for Rv1050"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for Rv1052"
```

```
RESULT 21
AC144792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                             VERSION
                                                                                                                          ACCESSION
                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x MTV017 (1-67200)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                              46872
                                                                                                                                                                                                                                                                                                                                                                                      AC144792 210652 bp DNA linear HTG 20-MF Mus musculus chromosome UNK clone RP24-501M24, WORKING DRAFT SEQUENCE, 4 unordered pieces.
AC144792 GI:30911145 AC144792.1 GI:30911145 HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP.
Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4935. .5171

/gene="Rv1055", (MTV017.08), len: 78. Partial orf, first /note="Rv1055, (MTV017.08), len: 78. Partial orf, first /note="Rv1055, (MTV017.08), len: 78. Partial orf, first 49aa similar to hypothetical Mycobacterium tuberculosis protein MTCY3G12 25 (151 aa shows similarity to integrases) andto Mycobacterium paratuberculosis integrase or transposases. FASTAscores: Z79702 MTCY3G12 25 (151 aa) opt: transposases. FASTAscores: Z79702 MTCY3G12 25 (151 aa) opt: 291 z-score:428.6 E(): 2.2e-16; 74.3% identity in 70 aa overlap; andgp|L39071 MSGINT 1 (191 aa) opt: 146 z-score: 221.0 E(): 8.3e-05; 52.1% identity in 48 aa overlap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="Rv1054"
/note="Rv1054,"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Rv1055"
4935. .5171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="Rv1054"
4726. .>4932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/trans1_table=11
/product=-hypothetical protein Rv1053c"
/protein_id="CAA17169.1"
/db_xref="GI:2896690"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RKGGFLPLGEYRWAFDNAGDQVGIE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="hypothetical protein
/protein_id="CAA17170.1"
/db_xref="GI:2896691"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="mdSHKvCmNnNTQLPTGPIIGVHPAVRDGVERVAYLDGDLLRCNTDVEFTSSPPPGPVLYRTKHTRVEIADEMVTEKLIKRQRAFNSRRHQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Rv1053c"
/note="Rv1053c, (MTV017.06c), len: 91. Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="hypothetical protein Rv1055"
/protein_id="CAA17171.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="SPTREMBL:053402"
/translation="MTGKGIVESTTKTKRDRHVPVPEPVWRRLHAELPTDPNALVFPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="SPTREMBL:053401"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      47.00
92.86%
64.29%
57.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.3e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . .4932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rv1054"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67200
9
                                                                                                                                                                                                                                                                                                                                                                                              46913
                                                                                                                                                                                                                                   HTG 20-MAY-2003
US-10-081-935-2 (1-18)
```

В á

x AC144792 (1-210652)

```
REFERENCE
AUTHORS
TITLE
                                        Percent Similarity:
Best Local Similarity:
  Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                      Pred. No.:
                                                                                                                           Alignment Scores:
                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                  misc_teature
                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequencing vector: M13; 0% Sequencing vector: plasmid; 100% Chemistry: Dye-primer ET; 0% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap; version 0.990319 Consensus quality: 209319 bases at least Q40 Consensus quality: 209715 bases at least Q30 Consensus quality: 209918 bases at least Q20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center project name: M_BB0501M24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center: Washington University Genome Sequencing Center Center code: WUGSC
Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (20-MAY-2003) Genome Sequencing Center, 4444 Forest Parkway, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The sequence of Mus musculus 
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wilson, R.K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: submissions@watson.wustl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wilson, R.K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ------ Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOTE: This is a 'working draft' sequence. It currently consists of 4 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 210652)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 210652)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12336
12436
37834
37934
94621
94721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----- Genome Center ------
                                                                                                                                                                                         Ø
                                                                                                                                                                                94721. .210652<sup>-</sup>
/note="assembly_name:Contig20"
<sub>4 48568 c 48742 g 58398 t</sub>
                                                                                                                                                                                                                                                                          /note="assembly_name:Contig18"
37934. .94620
                                                                                                                                                                                                                                             /note="assembly_name:Contig19"
                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig17"
                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Mus musculus"
/mol_type="genomic DNA"
/db_xref="taxon:10090"
/chromosome="UNK"
                                                                                                                                                                                                                                                                                                                    12436. .37833
                                                                                                                                                                                                                                                                                                                                                                                 clone="RP24-501M24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12335: contig of 12335 bp in length
12435: gap of unknown length
17833: contig of 25398 bp in length
37933: gap of unknown length
94620: contig of 56687 bp in length
94720: gap of unknown length
94720: gap of unknown length
210652: contig of 115932 bp in length
                 47.00
82.35%
47.06%
57.32%
                                                                                                      7.35e+03
                                      Length:
Matches:
Conservative:
Mismatches:
                    Indels:
                                                                                                                                                                                         315 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in length
00000
```

CDS

```
TITLE
JOURNAL
REMARK
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BX248337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         159347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (24-MAR-2003) Garnier T., Unite de Genetique Moleculaire Bacterienne Institut Pasteur 28, rue du Dr Roux 75724 PARIS cedex 15, France. e-mail:tgarnier@pasteur. Submitted on behalf of the Mycobacterium bovis sequencing teams. TB Research Group, Veterinary Laboratories Agency Weybridge, Woodham Lane, New Haw, Addlestone, Surrey KT15 3NB, UK. Sanger Centre, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 15A, UK. PT4 Annotation, Genopole, Institut Pasteur, 28 Rue du Docteur Roux, 75724 Paris Cedex 15, France. Unite de Genetique Moleculaire Bacterienne, Institut Pasteur, 28 rue du Docteur Roux, 75724 Paris Cedex 15, France.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetGlnPheSerHisAlaLeuIleAlaLeuValalaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Garnier, T., Eiglmeier, K., Camus, J.-C., Medina, N., Mansoor, H., Pryor, M., Duthoy, S., Grondin, S., Lacroix, C., Monsempe, C., Simon, S., Harris, B., Atkin, R., Doggett, J., Mayes, R., Keating, L., Mheeler, P.R., Parkhill, J., Barrell, B.G., Cole, S.T., Gordon, S.V. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mycobacterium bovis subsp. bovis AF2122/97
Mycobacterium bovis subsp. bovis AF2122/97
Bacteria, Actinobacteriade; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium; Mycobact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Garnier,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Online Publication PNAS 10.1073/pnas.1130426100 ( Microbiology ) 2 (bases 1 to 327650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BX248337.1 GI:31617663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BX248337

327650 bp DNA linear BCT 11-JUN-2003
Mycobacterium bovis subsp. bovis AF2122/97 complete genome; segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The complete genome sequence of Mycobacterium bovis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hewinson,G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tuberculosis complex.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BX248337 BX248333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGAGGTTTGCACATCAGCTTCTGGTCATGGTGGCATCAGGACTGATGAGC 159397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus tag="Mb0912"
/note="Mb0912, -, len: 490 aa. Equivalent to Rv0888, len: 490 aa, from Mycobacterium tuberculosis strain H37Rv, 490 aa, from Mycobacterium tuberculosis strain H37Rv, (100.0% identity in 490 aa overlap). Probable exported protein. Equivalent to AAK45157.1 from Mycobacterium tuberculosis strain CDC1551 (507 aa) but shorter 17 aa.
                                                                                                                  KKSKMPSQTPPEPPTLLWPIGVPFSDGLNTLSEFKVQRLDRQTWYECTSDNCLTLKGF
TYSQMRLPGGDTVDVYNLHTNTGGGPTTNANLAQVANYIQQNSAGRAVIVTGDFNARY
SDDQSALLQFAQVNGLTDAWVQVEHGFTTPPFAPTCMVGNECELLDKIFYRSGQGVTL
                                                                                                                                                                                                              ENRTFVANPQQVSVPEGGTVGPVRFDACDPDGNRMTFAVRERGAPGGPQHGIVTVDQR
TASFIYTADPGFVGTDTFSVNVSDDTSLHVHGLAGYLGPFHGHDDVATVTVFVGNTPT
DTISGDFSMLTYNIAGLPFPLSSAILPRFFYTKEIGKRLNAYYVANVQEDFAYHQFLI
                                                                                              QAVSYGNEAPKFFNSKGEPLSDHSPAVVGFHYVADNVAVR"
                                                                                                                                                                                                                                                                                                         translation="mDYAKRIGQVGALAVVLGVGAAVTTHAIGSAAPTDPSSSSTDSP/translation="mDYAKRIGQVGVGVCVDFGSIPDDLLNALIDFLAAVRNGLVPII"/
                                                                                                                                                                                                                                                                                                                                                                           /product="PROBABLE EXPORTED PROTEIN"
/protein_id="CAD93773.1"
/db_xref="GI:31617664"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contains possible N-terminal signal sequence."
/gene="citA"
/locus_tag="Mb0913c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mycobacterium bovis subsp. bovis AF2122/97"
/mol_type="genomic DNA"
/strain="AF2122/97"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:233413"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .327650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tag="Mb0912"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mycobacterium
```

```
/locus_tag="Mb0914c"
complement(3413..6061)
/locus_tag="Mb0914c"
/locus_tag="Mb0914c", len: 882 aa. Equivalent to Rv0890c,
/locus_mb0914c, len: 882 aa. Equivalent to Rv0890c,
/note="Mb0914c, len: 882 aa. verlap). Probable
transcriptional regulatory protein, LuxR family, highly
similar (but shorter 238 aa in N-terminus) to
NP 302202.1|NC 002677 possible transcriptional regulator
from Mycobacterium leprae (1106 aa). Also highly similar
(generally in part) to others e.g. T50568 probable
multi-domain regulatory protein from Sreptomyces
coelicolor (1334 aa); P10957|NARL ECOLI nitrate/nitrite
response regulator protein from Escherichia coli (216 aa),
FASTA scores: opt: 193 E(): 6e-06, (37.4% identity in 99
aa overlap); etc. Also highly similar co others from
Mycobacterium tuberculosis e.g. MTCV02B10 22, MTV008 44,
MTV036_21, and MTCY31_24. Contains PS00017 ATP/GTP-binding
site motif A (P-loop), P300622 Bacterial regulatory
proteins. luxR family vsignature. and probable helix-turn
                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transI_table=11
/transI_table=11
/product="PROBABLE TRANSCRIPTIONAL REGULATORY PROTEIN
/product="PROBABLY LUXR-FAMILY)"
/protein_id="CAD93775_1"
/protein_id="CAD93775_1"
/db_xref="G1:31617666"
/translation="WRALLAQNRLVTLCGTGGVGKTRLAIQIASASELRDGLCFVDLA
PITESGIVAATAARAVGLPDQPGRSTMDSLRRFIGNRRMLMVLDNCEHLLDACAALLVV
ELLCACPELTILATSREPIGWAGEITWRVPSWSITDEAVELFADRASRVQPGGTIANH
NAAAVGEICRRLDGIPLAIEFADARWRSSPLEIADGLDDCFRLLAGGVBGAVQRQQT
LRASIDWSHALLTETEQILFRRLAPFVGGFDLAAVRAVAAGSDLDFSVLDQLTLLVD
KSLVVADDCQGRTTYRLETVRRYALEKLGDSGEADVHARDYYTALAASLNTPADN
KSLVVADDCQGRTTYRLETVRRYALEKLGDSGEADVHARDYTTALAASLNTPADN
KSLVVADDCQGRTTYRLLETVRRYALEKLGDSGEADVHARDYTTALAASLNTPADN
                            DHQRLVARAETEI DNLRAAFAMSRENCHI TEALQLASSLQP INFGRAHLREGLSWFNS
I LEDQRFHRLAVSTAVRARALADKAMLSTWLATS PVGATDI I APAQQALAMAREVGDP
AALVRALTACGCSSGYNAEAAAP YFABATDLARA I DDKWTLCQI LYNRGVGTCI SGDP
NALRAAAEECRDLADT I GDRFVSRHCSLWLSLAGAMAGNLTEALELSRE I TAFAEASN
DVPTKVLGLYTQAQVLAYCQASAAHAI AGACI AAATELGGVYQGI GYAAMTYAALAAG
DVTAALEASDAAR PI LRAQPDQVTMHQVLMAQLALAGGDAI AARQFANDAVDATNGWH
RMVALT I RARVATARGEPELARDDAHAALACGAELHI YQGMPDAMELLAGLAGEVGSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ien: 373 aa, from Mycobacterium tuberculosis strain H37RV, (100.0% identity in 373 aa overlap). Probable citA (alternate gene name: glth), citrate synthase 2 (EC 4.1.3.7), highly similar to others e.g. CAB95899.1|AL359988 putative citrate synthase from Streptomyces coelicolor (387 aa); P39119|CISY BACSU citrate synthase II from Bacillus subbilis (366 aa), FASTA scores: opt: 586, E(): 5.0e-30, (33.0% identity in 367 aa overlap); etc. Also similar to Rv0896|MT031.24 from Mycobacterium tuberculosis (29.3% identity in 274 aa overlap) and Rv1131. Contains P500480 Citrate synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPMLDEVERAGDARSVVKGILDRGEKLMGFGHRVYRAEDPRARVLRAAAERLGAPRYE
VAVAVEQAALSELRERRPDRAIETNVEFWAAVVLDFARVPANMMPAMFTCGRTAGWCA
HILEGKRLGKLVRBSAIYVGGGPRSPESVDGWERVLTTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /translation="mtvvpenfvpgldgvvaftteiaepdkdggalryrgvdiedlvs
Grvftgdwallvdgregsgldpaeffflp Hisgdvrvdvagaclamlafimgyaflld
IDDATARQQLARASWALSYVAQSARGIYQPAVPQRIIDEGSTVTARFMTMQGEPDF
RHIEAIDAYWVSAAEHGMNASTFTARVIASTGADVAAALSGAIGAMSGPLHGGAPARV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                signature. BELONGS TO THE CITRATE SYNTHASE FAMILY."
/codon_start=1
/transI_table=11
SEGVRLLGAAAALRQQTRQVRFKIWDAGYQASVTALREAMGDEDFDRAWAEGAALSTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteins, luxR family signature, and probable helix-turn helix motif from aa 836 to 857 (Score 1559, +4.50 SD).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="PROBABLE CITRATE SYNTHASE II CITA"
/protein_id="CAD93774.1"
/db_xref="GI:31617665"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGULATORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (3413.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="Mb0913c"
/EC_number="2.3.3.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (2205. .3326)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Mb0913c, citA, len: 373 aa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="citA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TO THE LUXR/UHPA FAMILY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .6061)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSCRIPTIONAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Equivalent to Rv0889c,
```

CDS

```
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores: Pred. No.:
US-10-081-935-2 (1-18) x BX248337 (1-327650)
                                                                                                                                                                                                                                                                        Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /EC_number="1.14..."
/EC_number="1.14..."
/note="Mb0916, -, len: 495 aa. Equivalent to Rv0892, len: 495 aa, from Mycobacterium tuberculosis strain H37Rv, 195 aa, from Mycobacterium tuberculosis strain H37Rv, 195 aa, from Mycobacterium tuberculosis strain H37Rv, 100.03 identity in 495 aa overlap). Probable (100.05 identity in 495 aa) identity in 495 aa); 100.03 identity in 491 aa); 100.03 identity in 492 aa overlap); 100.03 identity in 492 aa overlap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         len: 285 aa, from Mycobacterium tuberculosis strain H37Rv, (99.6% identity in 285 aa overlap); Possible transcriptional regulator, highly similar in N-terminus to NP_302202.1|NC_002677 possible transcriptional regulator from Mycobacterium leprae (1106 aa). Also highly similar to several Mycobacterium tuberculosis putative transcriptional regulators e.g. Q1102|MTCY02B10_22 PROBABLE TRANSCRIPTIONAL REGULATORY PROTEIN (1159 aa), FASTA scores: opt: 702, E(): 8.3e-40, (50.6% identity in 247 aa overlap); MTV036_21; MTV008_44; MTCY02B10_23. Also shows similarity with several adenylate cyclases and hydrolases from other organisms."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="Mb0915c"
/locus_tag="Mb0915c"
/locus_tag="Mb0915c, -, len: 285 aa. Equivalent to Rv0891c,
/note="Mb0915c, -, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MTGRCPTVAVVGAGMSGMCVAITLLSAGITDVCIYEKADDVGGT WRDNTYPGLTCDVPSRLYQYSFAKNPNWTQMFSRGGEIQDYLRGIAERYGLRHRIRFG ATVVSARFDDGRWVLRTDSGTESTVDFLISATGVLHHPRIPFLAGLDDFRGTVFHSAR WDHTVPLLGRRIAVIGTGSTGVQLVCGLAGVAGKVTMFQRTAQWVLPWPNPRYSKLAR VFHRAFPCLGSLAYKAYSLSFETFAVALSNPGLHRKLYGAVCRASLRRVRDPRLRALL TPDYEPMCKRLVMSGGFYRAIQRDDVELVTAGIDHVEHRGIVTDDGVLHEVDVIVLAT GFDSHAFFRPMCLTGROIR IDDVWQDGPHAHQTVALPGFPNFFMMLGPHSPYGNFFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MLFNAVHNSLPPNIDIDHAILRGEDHPPTCAKCVARGRISALGS
LDLRYISLRCYAAPPDVGRCEEVPPRRRVLIANGLLDVSRLPPTGTVTLLLADVEEST
HLMQNCPEDMATAIAHLDHTVSSAITNHGGVQPVKRYSGDSFVAAFTRASDAAACHLD
LQRTSLAPIRLRIGLHTGEVQLADELYVGPTINRTARLADLAHGGQVVLSAATGDLVT
GRTSLAPIRLRIGLHTGEVQLRDELYVGPTINRTARLADLAHGGQVVLSAATGDLVT
GRTPADAMLVDLGRHPLRGLPRPEMVMQLCHPDIREKFPPLRTAKSSPTSILPAQFTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EAIAYAQRGRGERKRPARGWGSLTPTERDVVRLVSEGLSNKDIAKRLFVSPRTVQTHL THVYAKLGLASRVQLVDEAARRGSPS" complement (6063. .6920)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAVAESQAEHI VQWI KRWRHGEFDTMEPKSAATEAYNTVLRAAMPNTVWTTGCDSWYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hydrophobic stretch at N-terminus."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /locus_tag=
7318. .8805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FVGRRAQIS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="POSSIBLE TRANSCRIPTIONAL REGULATORY PROTEIN"
/protein_id="CAD93776.1"
/db_xref="GI:31617667"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /protein_id="CAD93777.1"
/db_xref="GI:31617668"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /locus_tag="Mb0916"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="Mb0915c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product="PROBABLE MONOOXYGENASE"
                                                                                                                                                                                  1.15e+04
47.00
92.86%
64.29%
57.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _tag="Mb0916"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         table=11
                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
```

Ş

PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
ORGANISM
     Query Match:
DB:
                         Percent Similarity:
Best Local Similarity:
                                                                                                                       primer_bind
primer_bind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                  Alignment Scores:
Pred. No.:
                                                                                                           ORIGIN
                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pocas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     233446 TTCGCGCACGCCCTGGTGTCGATCGTTGCCGCTGAATTGGCG 233487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 1204)
Crooijmans, R.P., Dijkhof, R.J., van der Poel, J.J. and Groenen, M.A.
New microsatellite markers in chicken optimized for automated
fluorescent genotyping
Anim. Genet. 28 (6), 427-437 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tagged site.
G32057
                                                                                                                                                                                                                                                           size
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Department of Animal Breeding
Wageningen Agricultural University
Box 318, 6700 AH Wageningen, The Netherlands
Email: richard.crooijmans@alg.vf.wau.nl
Primer A: GGAGAGAGACAACTGTATTC
Primer B: AGGGTGAGAGAGTAACAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gallus gallus (chicken)
Gallus gallus
                                                                                                                                                                                                                                                                                                                                                      Buffer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protocol:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MCW301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G32057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STS size:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Richard Crooijmans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9589584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98251489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G32057.1 GI:2138003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Profile:
                                                                                                                       260
                                                                                                                                                                                                                                                         range: 266-284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chicken RPMACrooijmans
                                                                                                                       þ
                                                                                                                                                                                                                                                                                   50 mM
Tris-HCl: 10 mM
Tetramethylammoniumchloride(TMAC): 1 mM
pH: 8.3
                                                                                                                                               290. .567
                                                                                                                                                                                                                                                                                                                                                                                                                      Template:
Primer:
                                                                                                                     complement (547. .567)
279 c 294 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Annealing:
Polymerization:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Thermal Cycler:
                                                                                                                                                                         /mol_type="genomic DN
/db_xref="taxon:9031"
/clone_lib="Chicken R
                                                                                                                                                                                                                                1. .1204
                                                                                                                                                                                                                                                                                                                                                                                 Polymerase
Total Vol:
                                                                                                                                                                                                                                                                                                                                                                                                            dNTPs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCR Cycles:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Denaturation:
                                                                                                                                                                                                                organism="Gallus gallus"
                                                                                                                                                                                                                                          ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 resoak:
  60
46.00
92.31%
69.23%
56.10%
                                                                                                                                                                         _lib="Chicken RPMACrooijmans"
                                                                                                                                                                                                                                                                                                                                                                                              Goldstar:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1204 bp DNA 11155.
imans Gallus gallus STS genomic, sequence
                                      Length:
Matches:
Conservative:
              Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ¥35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
94
55
72
                                                                                                                                                                                                     DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        degrees C
degrees C
degrees C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                research
                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                              10-100 ng
each 295 n
each 200 k
0.4 U
12 kl
                                                                                                                      ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C for 5 minute (s):
C for 30 seconds
C for 45 seconds
C for 90 seconds
1204
9
3
1
0
                                                                                                                      11 others
                                                                                                                                                                                                                                                                                                                                                                                                          ጅጅ
                                                                                                                                                                                                                                                                                                                                        1.5 mM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STS 27-OCT-1998
```

```
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 24
AF382191/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x G32057 (1-1204)
                                            Pred. No.:
                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Haas, J., Woessner, J.P. and Waffenschmidt, S.
Direct Submission
Submitted (18-MAY-2001) Institute of Biochemistry, University
Cologne, 47 Zuelpicher Str., Koeln 50674, Germany
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Haas, J., Woessner, J.P. and Waffenschmidt, S. VSP6 hydroxyproline rich glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Waffenschmidt,S., Woessner,J.P., Beer,K. and Goodenough,U.W. Isodityrosine cross-linking mediates insolubilization of cell walls
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chlamydomonas reinhardtii
Chlamydomonas reinhardtii
Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (vsp6) mRNA, complete cds. AF382191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF382191 3996 bp mRNA linear PLN 10-JUN-:
Chlamydomonas reinhardtii hydroxyproline rich glycoprotein Vsp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plant Cell 5 (7), 809-820 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AF382191.1 GI:14334121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7689882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chlamydomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 3996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 3996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 3996)
                                                                                                                   793
                                                                                                                   a
                                                                                                                                                                    PLRFGWDYCPDACNTAAPPADTASYPQGIHCKNGFTGLPGTSCTCSNSYAISFQGIGT
KYTGQSGCTEFEETGSGMCVTTCTKNADKSFNNKPYTCACK"
                                                                                                                                                                                                                                                                                                   PGGRRLLAANSAERWLOLVKAFIKSGLOAPALOGRLGDLTPMFGDVDAIVDLVVDLWN
SIRGIAABANSIAASQODYHSSFEPPPEPTPVQVGWNVSVLTWNPIIAGEEGDDIVO
DVPRGSSRRRLLQDNQIVIPLPAGFTPOKRANLLPTVLIPLVWHIMMYONGDGTTYGPE
YDKACDMAHGMIAIANFRLMPARFQLFLQECRNTPSYQYLIKPSRDRWINCASPGFFY
                                                                                                                                                                                                                                                                                                                                                                            RWRPPYGLLAVALFLAVCVGFGGGPGAGWAAHPDTQTVAPAVPVADVSNGSÄASGNVD
IIRAFMPIDYERNANNKAIQTHYDQTSILNPAFHALSADISSVGGTNATYDPNVLRIY
VLSKYKGSQDLLARLFNVAHGLQVSPDFNAQLYQLTTSLADVFGYIRDNQSKYGTASG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="hydroxyproline rich glycoprotein Vsp6"
|protein_id="AAK60544.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="vsp6"
/note="cell wall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="vsp6"
16. .2903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Chlamydomonas reinhardtii"
/mol type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                  translation="MVFASTMAKKQNYHLEDSAPSVSVHSEGFDDFVENESQGHEQEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       db_xref="GI:14334122"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ďb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
       203
46.00
84.62%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      xref="taxon:3055"
                                                                                                                   O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein"
     Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLN 10-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AY036106/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18) x AF382191 (1-3996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (18-MAY-2001) Institute of Biochemistry, University Cologne, Zuepicher Str. 47, Koeln 59674, Germany Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chlamydomonas reinhardtii
Chlamydomonas reinhardtii
Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4029 bp mRNA linear PLN 09-AUG-Chlamydomonas reinhardtii hydroxyproline-rich glycoprotein VSP4 mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Haas, J., Woessner, J.P. and Waffenschmidt, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               reinhardtii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haas, J., Woessner, J.P. and Waffenschmidt, S. VSPA-hydroxyproline-rich glycoprotein from Chlamydomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Waffenschmidt,S., Woessner,J.P., Beer,K. and Goodenough,U.W. Isodityrosine cross-linking mediates insolubilization of cell walls
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY036106.1 GI:15145802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY036106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in Chlamydomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7689882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACGCACTTGCAGCCCTTGTTGGTGCTGGACTGGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 4029)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 4029)
                                                                                                                      Cell 5 (7), 809-820 (1993)
                                                             SAAWKVKGSTTTYTGCANPTNDPKGNWCLLAKGSHRLGAAWDYCLDNCNAASPAPSTG
                                                                                          CANARNGWWDYCTPSCGTNPAPSPSPSPSPSPSPSTSTGGTPSCGAGAPTKSGLTCT
                                                                                                                                                                                                                                                                                                                   /product="hydroxyproline-rich glycoprotein VSP4"
/protein_id="AAK83527.1"
/db_xref="GI:15145803"
                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Chlamydomonas
/mol_type="mRNA"
/db_xref="taxon:3055"
196. .3171
                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                     note="cell wall protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 to 4029)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76.92%
56.10%
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLN 09-AUG-2001
```

Length:

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 26
MMU307017
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (02-MAY-2001) Hall N.M., Department of Pathology,
University of Cambridge, Tennis Court Road, Cambridge, CB2 1QP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Thesis (2001) Department of Pathology, University of Cambridge, Cambridge, United Kingdom
2 (bases 1 to 8117)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AJ307017.1 GI:14041781 ubiquitin-specific protease; Usp9y gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MMU307017 8117 bp mRNA linear ROD 14-MAY-20 Mus musculus mRNA for putative ubiquitin-specific protease (Usp9y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hall, N.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hall, N.M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UNITED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACGCACTTGCAGCCCTTGTTGGTGCTGGACTGGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer
                                                                                           AKLGOMP FFILEILAIALNEHCKHVYGARPCESVSSSVQFFBELFACSPOLHSPK
GWLVDLINTFGTLNGFQILHDRETSGSALNVQTIAAPIKPFGQCYEFLTQHTLRKYFI
PVIEVVPQILQKLTNEELKKETKTEVKNDTISMIIKFLASSRIPGGDETVKHLETF
RLKMILRLQISSFORGKWALMEINKYLSSVSYTHGHGNUSGGWLTVERMTEMIQQN
NILSIVLQDSLHQPQYVEKIEKILFVIKEKALTLQDLNNIWAAQAGKHEAIVKNVH
LLAKLAWNFSPEQLDHLFDCFKASWTNASKKQREKLLELIRRLAEDDKOGVMAHKVLN
LLWALAHSDDVPVDIMDLALSAHIKILDYSCSQDADTKIQWIDCFIEEFRTNNKWVI
PALKQIKEICSLFGEAFQNLSQTHQSPKYFHHDLISQLQHNHALVTLVAENLAAYKNN
SIRLYARDHEDYDPQTVRLGSRYSHVQEVGERLWFLKDGOLWLCVSQAKQIWNC
LAENAVYFSDREACFWYSKLMGDEPDLHPDINGFFEENVLQLDPSLLTENGMKCFE
RFFKTVNCREGKRIYMKNIYMTETTETTETTY
LGEYISSTOSDYHEERNILDMSKASYDTLCVLDSEKDNIFSCARQEAIRMYRILTV
LEEYISSTOSDYHEERNILDMSKASYDTLCVLDSEKDNIFSCARQEAIRMYRILTV
LEEYISSTOSDYHEERNILDMSKASYDTLCVLDSEKDNIFSCARQEAIRMYRILTV
LEEYISSTOSDYHEERNILDMSKASYDTLCVLDSEKDNIFSCARQEAIRMYRILTV
LEEYISSTOSDYHEERNILDMSKASYDTLCVLDSEKDNIFSCARQEAIRMYRILTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KINGDOM
                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/product="putative ubiquitin-specific protease"
/protein_id="CAC38831.1"
/protein_id="CAC38831.1"
/db_xref="GI:14041782"
/translation="MTITTRGSPVGENESQGQTSDGQPOPSFQONQISSSDSSNETSP
TTPPYECGQGDAPPHEEDPSFPHTDPAKLEDMINRSRWVVPVLPKCELEVILLETSI
DLTKKCLDVKSEACQRFFRDVLTVSFSKILMDEAVSGMKFEIHRCIINNTHRLVELCV
MLTVPTLRDGARILMKLMPPDSTTLEQLRALCSDHVNLGERRLGQSLHSLFFGSSASQ
VLYLTEVVYTLLMPAGAPLADISSDFQYHFLKSGGLPLVLSMLIQNNFLPNTDVETRR
                                               VRRCILNRMNVNVAHTKIELFIGGELVASEDDRKLVEQLNLKDKSLITAKFIQINSNM
PSSPDSSSDSSAGPPGNHSHNNYRDVSNPEMEKCLPGVIMSLQPRYISFLWQVADLGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      419. .8089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="testis"
1. .8117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Usp9y"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="Usp9y"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="mRNA"
/strain="BALB/c"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sex="Male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chromosome="Y"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          x AY036106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46.00
84.62%
76.92%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (1-4029)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ROD 14-MAY-2001
```

```
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
DEFINITION
ACCESSION
                   Query Match:
                                                    Best Local
                                                                              Percent Similarity:
                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2231
                                                  Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10323 bp
Sequence 439 from Patent W00188188.
AX305688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17 :::|| :::||||||||||:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                 School Juridical Person Nihon University (JP)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                      Ishikawa,K., Asai,S., Takahashi,Y., Naga
Method for examining ischemic conditions
Patent: WO 0188188-A 439 22-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AX305688.1 GI:17645121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTCAGCATAATCATGCTTTAGTTACTTTGGTAGCAGAAAACCTTGCAGCT 2281
                                                                                                                                                                                                                                          3055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RPKGFOLKNAGATCYMSVI VOQLFMI PSIRNSI INSINSTI WSDINGSI WSDINDDI FKGEKODSE
NNVDBRDDVFRYPHOFEDKPTLSKVEDRKEYNI AVLKHLOI TFGHLAASOLQYYVPKG
FWQQFRLMGEPVNLREQHDALEFFNSLVDSLDEAFKAHGYTVLSKVLGGSFADOKI C
GCCPHRYECEESFTTLAVDI RNHONLLDSLEQYVKGDLLEGANAYHCEKCDKVDTVK
RLLI KKLPSVLT I QLKRFDYDWERECAI KFNDY FEF PRELDMEPYTVAGATKLEGDSV
NPQTQLI KONEGSESVI PGSTKYRLVGVVLYGGGANGGHYSY SY I 1 QRNGKDSKRSHWF
KFDDGDVTECKMDDDEEMKNQCCFGGEYMGEVPDHMMKRNSYRROKRMNAN Y ILFYERM
DITDEDDEI I TY I SELTFTR PHQIMSPAI ERS VWKQNVQFLHNQMQFSLEY FQFI KKL
LTCNAVYLSPAPGODHLDFEABDITMI SI QLASRFLFTTGFHTKKI I RGFANDWYDAL
CILLHRISKUNRFWFYNNVLFNVSNRFSEYLLECPSAEI RGTFAKLI VFI AHFSLODGS
SPSPFTSPFANPGPYSQI YDNUSLSEDHLLKAVLSLLRREVSEHGHLQQYFNLFINYA
SLGLAEKTQLLKLNVPATFMLVSLDEGPGPPVKYQYAELSKLHSYVSQLI RCCSVSSR
MGSSI NGNPPLPNPFGDPNLSQPIMPI GOVNADI LFMRTTYMKKVI EDGGNSEDTVKL
LLFCCMENPQFSGSVLSELLWQYAHSHAYELQPYLDLLLQI I LFEDSMOAHRI HNALK
GI PNOQDGLPDTI QHSKNHHQKRAYQCI KMMTTLFNSCPAYQILLGKNKHHAAK
                                                                                                                                                                                                                                       Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TLLRRLLTYAYNSNIQVPNVDVLLNDEIDWLKRVRDYIKNTGETNVEDPILEGHLGVT
KELLSFQSPEKKYHIGCKTGGANLVKELIDYFIFPASKAYLQYMRSGELPIKQAIPVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIPNPSSECMLRNVSVHLAQQISGLASRYIPDICVIRAIQKIIMAAGCGSLELVFSPN
EDITETYKMTTSTRSNLEVKDEQVCCEALEVMTLCFALIPTAMDSLNKEKAWQSFVID
LLLYCPSKTVRQLAQEQFFLICTRCCMGHRPLLFFITLLFTILGGAANEKGKHSDVYF
                                                                                                                                                                                                                                    /organism="Mus musculus"
/mol_type="genomic DNA"
/db_xref="taxon:10090"
1989 c 2201 g 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QETHESNEEISSCLIKDQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEWLGDELERKPYSGNPQYTYSNWSPPVQSNETANGYFLEKSHSAKMKLTKACDLYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSPATINAGFELLVALAFGCVRNLKQIVNCLTELFY1GTPVTTCEAVGEWEYLPPVGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EDPDDQDALDEHVSHAPQDRTFYLYSHRSHYQQNYVPEQPFSGPASHHLNNPQKNDKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  x MMU307017
532
46.00
76.47%
52.94%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       417
46.00
76.47$
52.94$
56.10$
                                                                                                                                                                                                                                                                                                                                                 .10323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1481 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1-8117)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g,
                                                                                                    Length:
Matches:
                                               Conservative: Mismatches:
                         Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels:
                                                                                                                                                                                                                                          3078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2416 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nagata, T.
04400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT 11-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Murinae;
```

RESULT 27 AX305688

밁 ş

ORIGIN

Score: Pred. No.:

REFERENCE AUTHORS TITLE

JOURNAL

FEATURES

Score:

Pred. No.:

BASE COUNT ORIGIN

```
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-2 (1-18) x AX305688 (1-10323)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MMU67874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2171 CTTCAGCACAATCATGCCCTAGTTACTTTGGTAGCAGAAAACCTTGCAACT 2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Mus. Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 10323)
1 (bases 1 to 10323)
1 Wood, S.A., Pascoe, W.S., Ru, K., Yamada, T., Hirchenhain, J., Kemler, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus fat facets
U67874
U67874.1 GI:1527198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (23-AUG-1996) CMCB, University of Queensland, St Lucia, Qld 4072, Australia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cloning and expression analysis of a novel mouse gene with sequence similarity to the Drosophila fat facets gene Mech. Dev. 63 (1), 29-38 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wood, S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97321544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MMU67874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 10323)
                                                                                          PILEMYOFILEMIN GLIMORY CHAPALAR TO CHEE LITE IN COLLEGE

PILEMY IN TO SELECT ON THE COLLEGE AND THE PROPERTY OF THE LITE IN COLLEGE

RIKMY ILRILO I SEFNIGWNALMEVNIKY I SEVENYYTHRIGS EDEEMLTAERMAEMI QO

NNILSI VILROSLIQO YYVEKLEKI LIF YLIKEKALI TIQLUNI WAAQAGKHEAI VKWH

DLLAKLAMDES PEQLOHIL-DECFKASITMASKKOREKLLELI RRILAEDDKOGYMAHKYL

NILMANLAHSDD YPVDI MOLALSAHI KILDY SCSQDRDTOKI QWI DRFI EELRTINDKWY

I PALKQI REI CSLFGEARONLSOSQINS PHYFYRHDI INQLOHNHALVTI VAENLATYM

ESMRMYGRDNED YDQTYTALGSRY SHVOEYRHDI INGLOHNHALVTI VAENLATYM

ESMRMYGRDNED YDQTYTALGSRY SHVOEYRHDI INGLOHNALLOED SLLTENGKCF

ERF FKANNCI COREACFKWYSKLMGDE POLDPOINKD FES.NVLQLDPS LLTENGKKCF

ERF FKANNCI REGKLVAKRRAYMNDD LELI GLDYLMR VVLQSNDD I ACRAIDLIKEZ YT

NIGPRLQVNQVVI HEDDFI QSCEPRLKASYDTLCVLDGOKOS INCARGENARWAVLTV

LREYI NECDSDYHEERTI LPMSRAFRGKHLSFI VRFPNQGRQVDDLEVWSHTNDTI GS

VRRCI LINRI KANVAHTKI ELFVGGELI DEGDBRKLI GQLUKKDKSI I TAKLTQI SSNM

PSSPDSSSDSSTGSPQNHGHHYSDGPNDEVESCLPGVIMSLHRRY I SFLWOVADLIGSS

LNMPPLRDGARVLMKLMPPDSTTI EKLRAI CLDHAKLGESSLSPSLDSLFFGPSSAQV

LYLTE VYYALLMRAGAPUTDDSSDFQFHFLKSGGLPLVLSMLTRINFLPNADMETRRG

AYLMALKIAKLLITAI GYGHURANAFACQOGSUBEOVRATSVNOVTHDOAVVLOSALOS

I PNESSECMLRNVSVRLAQQI SDEASRYMPDI CVIRAIHQI INTSGCGGLQLVFSSNE

EVTKI YEKTNAGNEDDLEDEQVCCEALEWTLCAFALI PALDALSKEKKAQTFII DLL

TUTUGUTONONING TORTONING TORT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DLSKKGLDVKSEACQRFFRDGLTISFTKILTDEAVSGWKFEIHRCIINNTHRLVELCV
AKLAQDWFPLLEILAWALNPHCKFHIYNGTRPCESVSSSVQLPEDELFARSPDPRSPK
GWLVDLLNKFGTLNGFQILHDRFINGSALNVQIIAALIKPFGQCYEFLTLHTVKKYFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MTATTRGSPVGGNDNQGQAPDGQSQPPLQQNQTSSPDSSNENSPATPPDEQGQGDAPPQIEDEEPAFPHTDLPKLDDMINRPRWVVPVLPKGELEVLLEAAI
LLAFQTPEKKFHIGCEKGGANLIKELIDDFIFPASNVYLQYMRNGELPAEQAIPVCGS
                               LHCHSKTVRQVAQEQFFLMCTRCCMGHRPLLFF1TLLFTVLGSTARERAKISGDYFTL
LRHLLNYAYNSNINVPNAEVLLNNEIDWLKRIRDDVKRTGETGVEETILEGHLGVTKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="putative ubiquitin-specific protease; homolog of prosophila fat facets gene"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /protein_id="AAB07731.1"
/db_xref="GI:1527199"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/product="FAM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="Fam"
356. .8035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                db_xref="taxon:10090"/chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Mus musculus"
|mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene="Fam"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 map="DMit53 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .10323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .10323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10323 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DM1 t 57"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         homolog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Fam) mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ROD 28-JUN-2001
```

Ś

Score: Pred. No.: ORIGIN BASE COUNT

밁

Percent Similarity:
Best Local Similarity:
Query Match: US-10-081-935-2 (1-18) x MMU67874 (1-10323) Alignment Scores: 2171 CTTCAGCACAATCATGCCCTAGTTACTTTGGTAGCAGAAAACCTTGCAACT 2221 Homo sapiens AC142230 AC142230.3 Homo sapiens (human) Homo sapiens chromosome 3055 a LIKKLPPVLAIQLKRFDYDWERECAIKFNDYFEFPRELDMEPYTVAGVAKLEGDNVNPESQLIQONEQSSEKAGSTKYRLUGULVHSGQASGHYYSYI QRNGGDGEKRRWYKF
DGDUTECKNDDDEENKTQCFGGEVAGEVLDHWKGRASHYSSYI QRNGGDGEKRRWYKF
LTCNGUTLRYISEIAITTR PHQIVMPSAIERSVRKQNVQFMHRRMQYSLEYFQFMKKL
LTCNGUYLNPPPGODHLSPEREITMIS QLAARFLFTTGFHTKKI VRGSASDWYDAL
CILLRISKNVRFWFAHNVLFNVSNRFSEYLLECEYSAEVFAAFAKLIVFIAHFSLQDGF
CPSPFASGGAYDNLSLSDHLLRAVLNLLREVSEHGRHLQQYFNLFVMYANLGV
AEKTQLLKLSVPATFMLVSLDEGPGPPIKYQYAELGKLYSVVSQLIRCCNVSSRMQSS
INGNPSLPNPFGDPNLSCDEGPGPPIKYQYAELGKLYSVSGLIRCCNSSRMQSS
INGNPSLPNPFGDPNLSQPIMPIQQNVVDILTKTTSYVKLIEDSWGTHRINALKGIPD
DREGGLPDTIQRSKNHYQKRAYQCIKCMVALFSSCPAYQILGONGDLKRKMTMAVEML
DREGGEPTTIQRSKNHYQKRAYQCIKCMVALFSSCPAYQILGONGDLKRKMTMAVEML PKGFVGLKNAGATCYMNSVIQQLYM PSIRNGILAI EGTGSDVDDMSGDEKODNESN VDPRDDVFGYPQQFENKPPLIKTENRKKYNIGVLHLLQVIFHJLAASRLQYYVPKGFW KQSRLWGEFVNLRECHDALKSFNSLVDSLDEALKALCHPAMLSKVLGGSFADOKICQG CPHRYECEESFTTLNVDIRNHQNLLDSLEQYVKGDLLEGANAYHCEKCNKKVDTVKRL NYEGGEEVSPPQTKGSVKCTY" GDELERRPYTGNPQYTYNNWSPPVQSNETSNGYFLERSHSARMTLAKACELCPEEEPD DQDAPDEHESPPPEDAPLYPHSPGSQYQQNNHVHGQPYTGPAAHHMNNPQRTGQRAQE PATINAGFELLVALAVGCVRNLKQIVDSLTEMYYIGTAITTCEALTEWEYLPPVGPRF 532 46.00 76.47\$ 52.94\$ 56.10\$ GI:29501953 10 2201 g 26013 bp clone XXFOS-87252A6, Length: Matches: Gaps: Mismatches: Indels: Conservative: 3078 t 10323 9 linear lear PRI 03-APR-2003 complete sequence.

REFERENCE AUTHORS REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS TITLE REFERENCE AUTHORS TITLE ACCESSION VERSION KEYWORDS RESULT 29 AC142230 REFERENCE SOURCE DEFINITION AUTHORS TITLE TITLE JOURNAL JOURNAL JOURNAL JOURNAL ORGANISM Submitted (03-APR-2003) Genome Sequencing Center, Washington Waterston, R.H. MO 63108, USA Submitted (30-MAR-2003) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Direct Submission Waterston, R.H. Submitted (27-MAR-2003) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, Submitted (26-MAR-2003) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, 2 (bases 1 to 26013) Waterston, R.H. Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (Dases 1 to 26013)
Waterston, R. H. Direct Submission MO 63108, Direct Submission Waterston, R.H. MO 63108, USA Direct Submission The sequence of Homo sapiens clone Unpublished (bases 1 to 26013) (bases 1 to 26013) (bases 1 to 26013) USA Louis,

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-2 (1-18) x AC142230 (1-26013)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC138990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /ERSION
                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . No.:
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5372 CAGTTCTCCCACGCCTTTCCAGCCTCTTCAGCAGCAGCCCTT 5413
                                                                                  Finishing Completed at Stanford Human www-shgc.stanford.edu Quality: Phrap Quality >=40 100% of Se
                                                                                                                                                                                         Submitted (27-MAR-2003) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA On Mar 27, 2003 this sequence version replaced gi:27819484.
                                                                                                                                                                                                                                                                   Submitted (22-JAN-2003) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, US. 3 (Dases 1 to 125439)
DOE Joint Genome Institute and Stanford Human Genome Center.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center: Washington University Genome Sequencing Center Center code: WUGSC
Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        University School of Medicine, 4444 Forest Park Parkway, St. MO 63108, USA
On Apr 3, 2003 this sequence version replaced gi:29373197.
                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens chromosome
AC138990
AC138990.2 GI:29294040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Draft Sequence Produced by DOE Joint Genome Institute
                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 125439)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 125439)
DOE Joint Genome Institute and Stanford Human Genome Center.
                                 AC114316.
                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC138990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: submissions@watson.wustl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6788
                                              This sequence is not the entire sequence of the clone with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="XXFOS-87252A6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                           The number of basepairs overlapped is 118195.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.36e+03
46.00
78.57%
78.57%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5982 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Center -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5844 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 125439 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ທ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone RP13-708P15, complete sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                   Sequence
                                                                                                                                          Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26013
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRI 27-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Louis,
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 31
AC073440/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-2 (1-18) x AC138990 (1-125439)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SCOLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NO.:
      Bouck, J., Bowle, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Burket, J., Bowle, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Z., Chowdhry, I., Christopollos, C., Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., Davis, G., Davis, G., Davy-Carroll, L., Dederich, D.A., Davis, G., Davis, G., Davis, G., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugn, R.C., By, C., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugn, R.C., Borton, N., Gill, R., Carnett, G.C., Elhaj, C., Escotto, M., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P., Gabisi, A., Ggo, J., Garcia, A., Garner, T., Garza, N., Gill, R., Gorrell, J.H., Guevara, W., Gunaratne, P., Hale, S., Hamilton, K., Harris, C., Harris, K., Hartis, M., Hoyles, M., Holloway, C., Hollins, B., Homsi, F., Howard, S., Huber, J., Hulyk, S., Hume, J., Jackson, L.E., Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Joudah, S., Karlsson, E., Kelly, S., Khan, U., King, L., Korvah, J., Kovar, C., Kratovic, J., Kureshi, A., Landry, N., Leal, B., Lewis, L., Li, J., Liu, W., Loulseged, H., Lozado, R.J., Lu, X., Lucier, R., Luna, R., Ma, J., Kovar, G., Mitchall, T., Mohabbat, K., Morgan, M., Morris, S., Massey, E., Mattchell, T., Mohabbat, K., Morgan, M., Morris, S., Massey, E., McLeod, M.P., Meador, M., Mei, G., Wetzker, M., Massey, E., McLeod, M.P., Medodor, M., Mei, G., Wetzker, M., Massey, E., McLeod, R., Payton, B., Perry, J., Perez, L., Pickens, R., Primus, E., Pu, L.L., Quiles, M., Ren, Y., Rodery, N., Nogashari, N., Stseon, I., Stoothari, N., Stseon, I., Stoothari, N., Stseon, I., Thomas, S., Worley, K., Williamson, A., Wilcaryk, R., Wooden, S., Watten, R., Washas, A., Tang, H., Williamson, A., Marren, R., Wooden, S., Wooley, K., Walling, G., Williamson, A., Marren, R., Wooden, S., Wooley, K., Walli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 133445)

Muzny,D.M., Adams,C., Adio-Oduola,B., Ali-osman,F.R., Allen,C Alsbrooks,S.L., Amaratunge,H.C., Are,J.R., Ayele,M., Banks,T. Barbaria,J., Benton,J., Bimage,K., Blankenburg,K., Bonnin,D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens chromosome 12 clone SEQUENCE, 4 unordered pieces. AC073440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC073440.12 GI:20335621
HTG; HTGS_PHASE1; HTGS_D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40037 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/mol type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="5"
/clone="RP13-708P15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22627 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           46.00
81.25%
56.25%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.73e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
Wleczyk, R., Wooden, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RP11-100E14, WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG 08-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Allen,C.,
Banks,T.,
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                          Alignment Scores:
Pred. No.:
US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center project name: HBCF
Center clone name: HBCF
Center clone name: RP11-00E14
Center clone nam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (08-JAN-2003) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Apr 28, 2002 this sequence version replaced gi:16117941.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (18-JUN-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 3 (bases 1 to 133445)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wu, C., Wu, Y., Wu, Y.F., Zhou, J., Weinstock, G. and Gibbs, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 4 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 133445)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2014
2114
31790
31890
79585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site: http://www.hgsc.bcm.tmc.edu/
Drafting Center Code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Baylor College of Medicine Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                       clone="RP11-100E14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    location/Qualifiers
×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . .133445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2013: contig of 2013 bp in length
2113: gap of unknown length
31189: contig of 29676 bp in length
31889: gap of unknown length
79584: contig of 47695 bp in length
79684: gap of unknown length
133445: contig of 53761 bp in length.
                                                                     7.16e+03
46.00
93.75%
43.75%
56.10%
AC073440 (1-133445)
                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                              25551 g 40640
                                                                                                                                                                                                  Length:
Matches:
                                                              Gaps:
                                                                                                   Mismatches:
Indels:
                                                                                                                                                                        Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zorrilla,S., Nelson,D.,
                                                                                                                                                                                                                                                                                                                                                                                  н
                                                                                                                                                                                                                                                                                                                                                                                  300 others
                                                              133445
7
8
1
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 32
AC138980
                      Query Match:
                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                           score:
                                                                                                             Pred. No.:
                                                                                                                                  Alignment
                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117092 TTGAGGTTTACTCACTCTCTCTCTTTCCCTTCTGCAGGCTGGAATGGCA 117045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Consensus quality: 146757 bases at least Q40
Consensus quality: 146840 bases at least Q30
Consensus quality: 146855 bases at least Q20
Consensus quality: 146855 bases at least Q20
Estimated insert size: 175000; agarose-fp estimation
Estimated insert size: 146908; sum-of-contigs estimation
Quality coverage: 15.57 in Q20 bases; agarose-fp estimation

* NOTE: This is a 'working draft' sequence. It currently

* consists of 2 contigs. The true order of the pieces

* is not known and their order in this sequence record is

* arbitrary. Gaps between the contigs are represented as

* This record will be updated with the finished sequence

* This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----Genome Center
Center: Joint Genome Institute
Center Code: JGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MetGlnPheSerHisalaLeuIlealaLeuValalaAlaGlyLeuAla 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center Project Name: 3069541
Center clone name: RPCI-13_169F15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (22-JAN-2003) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOE Joint Genome Institute.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (bases 1 to 147008)
DOE Joint Genome Institute.
Sequencing of Human Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC138980.1 GI:27819474
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN.
Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC138980 147008 bp
Homo sapiens chromosome 5 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jnpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE, 2
AC138980
                                                                                                                                                                                                  48290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                              be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 147008)
                                                                                                                                                                                           /clone="RP13-169F15"
/clone_lib="RPCI human BAC library 13"
26527 c 25955 g 46136 t 100 oth
                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                           location/Qualifiers
7.9e+03
46.00
81.25%
56.25%
56.10%
                                                                                                                                                                                                                                                                                                                                                       .147008
                                                                                                                                                                                                                                                                                                                                                                                         28773: contig of 28773 bp in length 28873: gap of unknown length 147008: contig of 118135 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unordered pieces
                                         Conservative: Mismatches:
                      Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA linear H
RP13-169F15, WORKING
                                                                                                                                                                                             100 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTG 22-JAN-2003
NG DRAFT
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 33
AC138981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-081-935-2 (1-18) x AC138980 (1-147008)
Alignment Scores:
                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                       Consensus quality: 146200 bases at least Q40
Consensus quality: 146244 bases at least Q30
Consensus quality: 146579 bases at least Q20
Estimated insert size: 175000; agarose-fp estimation
Estimated insert size: 146777; sum-of-contigs estimation
Quality coverage: 5.31 in Q20 bases; agarose-fp estimation
Quality coverage: 6.33 in Q20 bases; sum-of-contigs estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 5 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
* be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                72017 AAATACCATCATGCCCTATTAGCAAAAGTGGCAGTTGGGTTATCCTCA 72064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------Genome Center
Center: Joint Genome Institute
Center Code: JGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (22-JAN-2003) Production Sequencing Facility, Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 147177)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 147177)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC138981 147177 bp DNA linear
Homo sapiens chromosome 5 clone RP13-193I10, WORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center clone name: RPCI-13_193I10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center Project Name: 3078824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequencing of Human Chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC138981.1 GI:27819475
HTG; HTGS_PHASE1; HTGS_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (human)
                                                                                                                                                                                                                                            2663
2763
12053
12153
12153
28942
29042
86683
86783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN
                                                                                                                                                                                                                   1 2662: contig of 2662 bp in length
2663 2762: gap of unknown length
2763 12052: contig of 9290 bp in length
2053 12152: gap of unknown length
28941: contig of 16789 bp in length
29041: gap of unknown length
29042: gap of unknown length
36682: contig of 57641 bp in length
3683 86782: gap of unknown length
3783 147177: contig of 60395 bp in length
3783 147179: contig of 60395 bp in length
                                                             Ø
                                                                                                                   /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 unordered pieces.
                                                       /clone="RP13-193I10"
/clone_lib="RPCI human BAC library 13"
26217 c 26202 g 45840 t 401 oth
                                                                                                                                                                                                 . .147177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HTG 22-JAN-2003
IG DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOE Joint
94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AP001493/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                        preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AP001493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 161624)
                                                       32855
48820
64189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7.91e+03
46.00
81.25%
56.25%
56.10%
                 86295
94552
```

```
US-10-081-935-2 (1-18) x AC138981 (1-147177)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72151 AAATACCATCATGCCCTATTAGCAAAAGTGGCAGTTGGGTTATCCTCA 72198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hattori, M., Ishii, K., Toyoda, A., Taylor, T.D., Hong-Seog, P., Fujiyama, A., Yada, T., Totoki, Y., Watanabe, H. and Sakaki, Y. Homo sapiens 161,624 genomic DNA of 18q21 published Only in DataBase (2000)
2 (bases 1 to 161624)
2 (bases 1 to 161624)
3 Hattori, M., Ishii, K., Toyoda, A., Taylor, T.D., Hong-Seog, P., Fujiyama, A., Yada, T., Totoki, Y., Watanabe, H. and Sakaki, Y. Direct Submission
Submitted (17-MAR-2000) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC);
                                                                                                                                                                                                    order in this sequence record is arbitrary. Gaps between the contigs are represented as runs N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and Chemical Research (RIKEN), Genomic Sciences Center (GSC); And Chemical Research (RIKEN), Genomic Sciences Center (GSC); Kitasato Univ., 1-15-1 Kitasato, Sagamihara, Kanagawa 228-8555, Japan (E-mail:hattori@gsc.riken.go.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-42-778-9923, Fax:81-42-778-9924)
On May 30, 2000 this sequence version replaced gi:7288187.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AP001493.2 GI:8117351
HTG; HTGS_PHASE1; HTGS_DRAFT.
Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AP001493 161624 bp DNA 1;
Homo sapiens chromosome 18 clone RP11-779H19
DRAFT SEQUENCE, 23 unordered pieces.
                                                                                                                                                                                                                                                                                                    NOTE: This is a 'working draft' sequence. It currently consists of 23 contigs. The true order of the pieces is not known and their
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                            Sequencing vector: PCR products; 100% of reads Chemistry: Dye-terminator ET-amersham; 100% of reads Assembly program: Phrap; version 0.990329
Consensus quality: 150399 bases at least Q40
Consensus quality: 155891 bases at least Q30
Consensus quality: 158891 bases at least Q20
Consensus quality: 158205 bases at least Q20
Consensus quality: 158205 bases at least Q20
Insert size: 159424; sum-of-contigs
quality coverage: 5.50x in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----- Project Information
Center project name: HumDraft18
Center clone name: RP11-779H19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Web site: http://hgp.gsc.riken.go.jp/
Contact: hattori@gsc.riken.go.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center: RIKEN Genomic Sciences Center(GSC)
Center code: RIKEN
     76357
86396
94653
                                                                          32754 contig
48719 contig
64088 contig
76256 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome Center
  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels:
       0000000
32754 bp
15865 bp
15269 bp
12068 bp
9939 bp
8157 bp
7943 bp
                                                                                                  in length in length in length
                                                                             555
                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear HTG
9 map 18q21,
length
length
length
                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-MAY-2000
WORKING
```

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     102696 110667 contig of 7972 bp in length
110768 116555 contig of 5788 bp in length
112656 122099 contig of 5444 bp in length
122200 125461 contig of 3262 bp in length
122200 125461 contig of 3262 bp in length
131178 135924 contig of 5516 bp in length
131178 135924 contig of 2285 bp in length
131178 135924 contig of 24747 bp in length
136025 138309 contig of 2423 bp in length
140933 144613 contig of 3681 bp in length
140933 144613 contig of 3681 bp in length
140933 144613 contig of 3687 bp in length
150921 154114 contig of 3194 bp in length
150921 154114 contig of 3194 bp in length
150921 154114 contig of 3194 bp in length
150321 154124 contig of 3194 bp in length
15033 161624 contig of 3194 bp in length
15033 161624 contig of 1860 bp in length
150543 161624 contig of 1860 bp in length
160543 161624 contig of 1860 bp in length
160540 160620 contig of 1860 bp in length
160620 contig of 1860 bp in length
160640 bp in length
160640 bp in lengt
                                                                                                                                  144714
147381
147481
150921
154115
154215
154215
156289
156389
158483
158483
158583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94653
102596
102696
110668
110768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140933
144614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138310
138410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               122100
122200
125462
125562
131078
131178
131178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116556
116656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      86296
86396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32755
32855
48720
48820
64089
64189
76257
76357
/organism="Homo sapiens"
                                                                    Location/Qualifiers
                         gap of 100 bp
contig of 5788 bp in length
gap of 100 bp
gap of 100 bp
gap of 100 bp
il contig of 5444 bp in length
gap of 100 bp
il contig of 3262 bp in length
for 100 bp
gap of 100 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                102595:
102695:
110667:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32754: contig of 32754 bp in length 32854: gap of 100 bp 48719: contig of 15865 bp in length 48819: gap of 100 bp 64088: contig of 15269 bp in length 64188: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94552:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
gap of
contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g of 7943 bp
f 100 bp
g of 7972 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  f 100 bp
g of 8157
f 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 9939 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 12068 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in length
```

FEATURES

```
RESULT 35
AL391259
                       LOCUS
DEFINITION
                                                                                                        밁
                                                                                                                                   ঠ
                                                                                                                                                                  US-10-081-935-2 (1-18) x AP001493 (1-161624)
                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
AL391259 163520 bp DNA linear PRI 06-DEC-2001
Human DNA sequence from clone RPI1-469E19 on chromosome Xp11.4-21.2
Contains a pseudogene similar to chloride intracellularnchannel 1
                                                                                              1 MetGlnPheSerHisAlaLeulleAlaLeuValAlaAlaGlyLeuAla 16

::::::|||:::|||:::|||::::|||::::|||:::

29 TTGAGGTTTACTCACTCTCTCCTTTCCCTTCTGCAGGCTGGAATGGCA 120182
                                                                                                                                                                                                                                                                                                                                        160543. .161624
/note="assembly_fragment"
/30115 c 30590 g 49168
                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
156389. .158482
                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
158583. .160442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
154215. .156288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
122200. .125461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94653. .102595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="18"
/map="18q21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
|36025. .138309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
125562. .131077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
116656. .122099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
102696. .110667
10076e="assembly_fragment"
11076e 116655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48820. .64088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
32855. .48719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly
50921. .154114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="assembly_fragment"
47481. .150820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly_fragment"
44714. .147380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="assembly_fragment"
40933. .144613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38410. .14083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_fragment clone_end:SP6 vector_side:left"
.38410. .140832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note="assembly_fragment"
|31178. .135924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .10768. .116555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="assembly_fragment clone_end:T7 vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'clone="RP11-779H19"
                                                                                                                                                                                                   8.7e+03
46.00
93.75%
43.75%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .94552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .86295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _fragment"
                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                 п
                                                                                                                                                                                                                                                                                                                                                 2200 others
                                                                                                                                                                                             161624
7
8
1
0
```

ō.

consensus"

of:

consensus'

of consensus"

of consensus"

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
     repeat_region
                                                                                               repeat_region
                                                                                                                                                   repeat_region
                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cambridgeshire, CB10 1SA, UK. E-mail enquiries:
humquery@sanger.ac.uk Clone requests: Clonerequest@sanger.ac.uk
On Nov 23, 2000 this sequence version replaced gi:11322140.
During sequence assembly data is compared from overlapping clones.
Where differences are found these are annotated as variations
together with a note of the overlapping clone name. Note that the
variation annotation may not be found in the sequence submission
corresponding to the overlapping clone, as we submit sequences with
only a small overlap as described above.
The following abbreviations are used to associate primary accession
numbers given in the feature table with their source databases:
Em., EMBL; Sw., SWISSPROT; Tr., TREMBL; Wp., WORMPEP; Information
on the WORMPEP database can be found at
http://www.sanger.ac.uk/Projects/C elegans/wormpep This sequence
was generated from part of bacterial clone contigs of human
Chromosome X, constructed by the Sanger Centre Chromosome X Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.sanger.ac.uk/HGP/ChrX
This sequence was finished as follows unless otherwise noted: all regions were either double-stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by at least one plasmid subclone or more than one M13 subclone; and the assembly was confirmed by restriction digest. RP11-469E19 is from the library RPCI-11.2 constructed by the group of Pieter de Jong. For further details see
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sections only once, except for a short overlap.
The true left end of clone RP11-469E19 is at 1185 in this sequence.
The true left end of clone RP5-1051C18 is at 1185 in this sequence.
The true left end of clone RP5-1172N10 is at 163421 in this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMPORTANT: This sequence is not the entire insert of clone RP11-469E19 It may be shorter because we sequence overlapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (06-DEC-2001) Wellcome Trust Sanger Institute, Hinxton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein, the 5' end of the protease 9 (Drosophila fat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VECTOR:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  http://www.chori.org/bacpac/home.htm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL391259.15 GI:11322864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chloride; CpG island;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Further information can be found at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pBACe3.6
                                                                                                                                                                                                                                                                                                      408.
                                                        2490
                                                                                                    /note="MLTID repeat: matches 3. 2147. .2448
                                                                                                                                                                                                                                                     1462.
                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                      /clone_lib="RPCI-11.2"
108. .615
                                                                                                                                                                                                                                                                                                                                                                      /map="p11.4-21.2"
                                                      note="AluSc repeat: matches 1.
2490. .2647
                                                                                                                                                                          note="FRAM repeat: matches 0. .173 of consensus"
                                                                                                                                                                                                                      note="MLT1D repeat: matches 217. .461 of consensus"
                                                                                                                                                                                                                                                                         note="AluJo repeat: matches 87.
                                                                                                                                                                                                                                                                                                                                                                                                     'chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 to 163520)
                                                                                                                                                                                                                                                                                                                                                    clone="RP11-469E19"
                                                                                                                                                                                                                                                     . 1669
                         repeat: matches 139. .296 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USP9X gene for ubiquitin specific facets related) and a CpG island,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   intracellular; protease; ubiquitin;
                                                                          .302 of consensus"
                                                                                                                           .184 of
                                                                                                                                                                                                                                                                         .286 of consensus"
                                                                                                                           consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                   repeat_region
                                                                                                                 repeat_region
                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="AluSg repeat: matches 1. .308 of consensus" 9299. .9451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="AluSp repeat: matches 1.
7436. .7625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="AluJo repeat: matches 17.
complement(2970. .3296)
/note="match: GSS: Em:AQ279697"
                                                                                                                                                                  /note="L1MC/D repeat: matches 5662.
i3097. .13178
                                                                                                                                                                                                                   /note="Charliela repeat: matches 33.
12896. .13033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Charliela repeat: matches 1287. .1379 of consensus" 11039. .11322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (3221
                                                                                                                                                                                                                                                                                                                                                                                                                     /note="U2 repeat: matches 1. .35
11381. .11519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="AluSc repeat: matches 2.
11333. .11367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Charliel repeat: matches 2161. .2574 of consensus"
10945. .11034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10256. .10557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="54 copies 2
8520. .8657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="AluJo repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5627. .6702
/note="LTR33 repeat: matches 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="FLAM_C repeat: matches 12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="match: GSS: Em:AQ278728"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="AluJb repeat: matches 24.
                                           note="LTR41 repeat: matches 13. .148 of consensus"
                                                                                                                    note="FLAM
3184. .1345
                                                                                                                                                                                                                                                                                         note="FLAM_A repeat: matches 1. .115 of consensus"
                                                                                                                                                                                                                                                                                                                                       note="Charliela repeat: matches 381. .1104 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                        note="FRAM repeat: matches 2. .146 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="AluSx repeat: matches 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="FRAM repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="Charlie1 repeat: matches 2593. .2756 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="LIMC5 repeat: matches 7156. .7496 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="AluSx repeat: matches 137. .286 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="AluSx repeat: matches 9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="MIR repeat: matches 3. .147 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="AluJo repeat: matches 136. .312 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="MIR repeat: matches 14. .191 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="AluJo repeat: matches 40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="AluSx repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="38 copies 2 mer ta 97% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="AluSc repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note≃"AluJb repeat: matches 85. .309 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .9919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .5872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .10086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .8977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 5199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .4907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .10946
                                                                                                                                                                                                                                                                                                                        .12460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mer aa 77% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            matches 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              matches 1.
                                                                                            matches 5323.
                                                                                                                                              matches 27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .146 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .304 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .282 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .137 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .296 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .136 of consensus"
. 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .84 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                          of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .281 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .308
                                                                                                                                           .109 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293
                                                                                          .5613
                                                                                                                                                                                            .5791 of consensus"
```

ဇ္ဌ

of consensus" consensus" of consensus"

.367 of consensus"

repeat_region

repeat_region repeat_region repeat_region repeat_region

repeat_region repeat_region

repeat_region

```
Homo sapiens chromosome 1 clone RP5-1051C18, PROGRESS ***, 26 unordered pieces.
AL356864
AL356864.6 GI:9926631
                                                                                                                                                                                                                                                                                        1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                 CTTCAACACAATCATGCCCTAGTTACTTTGGTAGCAGAAAACCTTTGCAACT 142140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="AluY repeat: matches 46. .290 of consensus"
18468. .18553
/note="MLTLH repeat: matches 93. .172 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="42 copies 2 mer ta 65% conserved"
19835. .20139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="LIPA11 repeat: matches 5718. .5849 of consensus"
19346. .19646
/note="AluSg repeat: matches 1. .301 of consensus"
19647. .19730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="AluSx repeat: matches 1. .166 of consensus"
19100. .19227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18833. .18998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="AluSp repeat: 17479. .17743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="LTR41 repeat: matches 418. .453 of consensus" 14145. .14452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="LTR41 repeat: matches 148. .301 of consensus"
14112. .14144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="AluSq repeat:
21922. .22076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="AluSg/x repeat: matches 70. .296 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15383. .15480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="MIR repeat: matches 33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="MER5A repeat: matches 26. .189 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="AluSq/x repeat: matches 1. .120 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="AluJb repeat: matches 77. .311 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="AluSx repeat: matches 3. .297 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="AluSx repeat: matches 1. .266 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="L1P4 repeat: matches 5258. .5451 of consensus"
| 15980. .16075
| Toote="MERSA repeat: matches 13. .112 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="LTR23 repeat: matches 36. .109 of consensus"
15595. .15768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="AluJo repeat: matches 1. .305 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="BUR1 repeat: matches 6167. .6271 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="LIMD1 repeat: matches 5705. .5884 of consensus" 5127. .15382
                                                                                                                                                                                                                                                                                                                                                                             x AL391259 (1-163520)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="LTR23 repeat: matches 204. .436 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                          8.8e+03
46.00
76.47%
52.94%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .15563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat: matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    matches 1. .293 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .296 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            163520
9
                                                                                                                                                                                                                                                                                                                                                                                                                                          4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .617 of consensus
                                                                                                  linear HTG 13-JUN-2001
B, *** SEQUENCING IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Assembly program: XGAP4; version 4.5 Sequencing vector: plasmid; L08752; 100% of reads Chemistry: Dye-terminator Big Dye; 100% of reads Consensus quality: 151580 bases at least Q40 Consensus quality: 156291 bases at least Q30 Consensus quality: 156291 bases at least Q30 Consensus quality: 159609 bases at least Q20 Insert size: 164376; sum-of-contigs Insert size: 164376; sum-of-contigs Quality coverage: 2.91x in Q20 bases; sum-of-contigs Quality coverage: 2.91x in Q20 bases; sum-of-contigs Quality coverage: 2.72x in Q20 bases; agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  requests: clonerequest@sanger.ac.uk
On Aug 25, 2000 this sequence version replaced gi:9214009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (12-JUN-2001) Sanger Centre, Hinxton, Cambridgeshire,
CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center project name: dJ1051C18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: humquery@sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center code: SC
Web site: http://www.sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center code:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center: Sanger Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTG; HTGS_PHASE1; HTGS_CANCELLED Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----- Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: This is a 'working draft' sequence. It currently consists of 26 contigs. The true order of the pieces is not known and their order in this sequence record in the sequence record
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as soon as it is available and the accession number will be preserved.
                            82657
82757
85453
85553
85553
90379
90477
954774
985574
98654
                                                                                                                                                                                                                                                                                                                                    44252
48109
48209
58415
58515
77250
77350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7584
11185
11285
118743
18743
22745
22845
22845
230192
30192
30192
31092
31092
31092
31092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7483: contig of 7483 bp in length
7583: gap of 100 bp
11184: contig of 3601 bp in length
11284: gap of 100 bp
18742: contig of 7458 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22844: gap o:
30191: conti
                                               s: contig of 5307 bp in length
s: gap of 100 bp
c: contig of 2696 bp in length
gap of 100 bp
c: contig of 4826 bp in length
gap of 100 bp
c: contig of 4995 bp in length
gap of 100 bp
c: contig of 2980 bp in length
gap of 100 bp
c: contig of 2980 bp in length
gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1: contig of 7347 bp in length
1: gap of 100 bp
1: contig of 6660 bp in length
1: gap of 100 bp
1: gap of 100 bp
1: contig of 4050 bp in length
1: gap of 100 bp
1: contig of 2950 bp in length
1: contig of 3857 bp in length
1: gap of 100 bp
2: gap of 100 bp
3: contig of 3857 bp in length
3: gap of 100 bp
                   gap of contig
                                                                                                                                                                                                                                                                                                                                    gap of
                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Information
of
f
                                                                                                                                                                                                                                                                                                                                                              g of 18735 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                          lg of 10206 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 3902 bp in length
of 6882 bp
100 bp
                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
```

ACCESSION VERSION

DEFINITION

AL356864/c

á

US-10-081-935-2 (1-18)

8

142090

Percent Similarity:
Best Local Similarity:
Query Match:

Alignment Scores:

repeat_region repeat_region

repeat_region

repeat_region repeat_region repeat_region

repeat_region

repeat_region repeat_region repeat_region

repeat_region

repeat_region repeat_region repeat_region repeat_region repeat_region repeat_region

18606.

repeat_region

```
FEATURES
              misc_feature
                                             misc_feature
                                                                          misc_feature
                                                                                                       misc_feature
                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         118545
130338
130438
130439
144197
144297
144297
149314
152429
152529
152529
152529
153650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             105636
114742
114842
                                                                                                         fragment
85553. .
                                                                                                                                                      fragment
82757. .
                        fragment_chai
58515. .77249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fragment
22845. .3
                98654.
                                                                            90479
                                                                                                                                                                                                    1ragment_cha
77350. .8265
                                                                                                                                                                                                                                                                                                                                           fragment_chai
44252...48108
                                                                                                                                                                                                                                                                                                                                                                                                                                       37052.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vector_side:left"
7584. .11184
                                                                                                                                                                                                                                                                                               48209. .58414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="1"
'note="assembly_fragment:00502"
                                                                                       note="assembly_fragment:00196"
                                                                                                                        /note="assembly_fragment:00800
fragment_chain:6"
                                                                                                                                                                     /note="assembly_fragment:01760
fragment_chain:6"
                                                                                                                                                                                                               /note="assembly_fragment:00448
fragment_chain:5"
                                                                                                                                                                                                                                                              /note="assembly_fragment:01296
fragment_chain:5"
                                                                                                                                                                                                                                                                                                            /note="assembly_fragment:01678
fragment_chain:4"
                                                                                                                                                                                                                                                                                                                                                      note="assembly_fragment:00825
ragment_chain:4"
                                                                                                                                                                                                                                                                                                                                                                                                       ragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment:00759
fragment_chain:3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment:01426
fragment_chain:2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment:00511
fragment_chain:2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11285. .18742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment:00504
fragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l. .166876
                                                                                                                                                                                                                                                                                                                                                                                                     note≃"assembly_fragment:01817
ragment_chain:3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="assembly_fragment:00626
!ragment_chain:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone="RP5-1051C18"
clone_lib="RPCI-5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0292. .36951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8843.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152428:
152528:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             114741:
114841:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163749:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     149413:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118644:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118544:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155010:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                assembly_fragment:01007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1: contig of 9106 bp in length
1: gap of 100 bp
4: gap of 100 bp
7: contig of 11693 bp in length
6: contig of 11759 bp in length
6: gap of 100 bp
6: contig of 13759 bp in length
6: gap of 100 bp
3: contig of 5017 bp in length
3: gap of 100 bp
9: contig of 3015 bp in length
8: gap of 100 bp
0: contig of 3015 bp in length
0: gap of 100 bp
0: contig of 332 bp in length
0: gap of 100 bp
0: contig of 8639 bp in length
0: gap of 100 bp
0: gap of 100 bp
0: gap of 100 bp
0: contig of 8127 bp in length
0: gap of 100 bp
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC118440/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x AL356864 (1-166876)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
Muzny, D. Marie, Metzker, M. Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Anyalebechi, V., Aoyagi, A., Ayodeji, M., Baca, E., Baden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Biswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, N., Buhay, C., Burch, P., Burrell, K., Calderon, E., Cardenas, V., Carter, K., Cavazos, I., Ceasar, H., Center, A., Chu, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Y., Chen, Z., Chu, J., Cleveland, C., Cockrell, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Draper, H., Dugan-Rocha, S., Dunn, A., Durbin, K., Duval, B., Eaves, K., Egan, A., Escotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Fernandez, S., Finley, M., Flagg, N., Forbes, L., Foster, M., Gebregoorgis, E., Geer, K., Gill, R., Garcia, A., Garner, T., Garza, M., Gebregoorgis, E., Geer, K., Gill, R., Grady, M., Guerra, M., Guevara, M., Hernandez, R., Hander, P., Haaland, W., Hamilton, C., Hamilton, K., Hernandez, J., Hawes, A., Henderson, N., Hernandez, J., Harvey, Y., Havlak, P., Hawes, A., Henderson, N., Hernandez, M., Gackson, A., Hogles, M., Hollins, B., Howells, S., Huldun, S.L., Hodgson, A., Hogles, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68948 CTTCAACACAATCATGCCCTAGTTACTTTGGTAGCAGAAAAACCTTGCAACT 68898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      169693 bp DNA linear HTG 19-NOV-2002
Rattus norvegicus clone CH230-255F21, WORKING DRAFT SEQUENCE, 6
unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTG; HTGS_PHASE1; HTGS_DRAFT; Rattus norvegicus (Norway rat) Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC118440.4 GI:25099817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC118440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 169693)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment:01263
fragment_chain:7"
163750. .166876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105636. .114741
/note="assembly_fragment:00551"
114842. .118544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment:01448
fragment_chain:7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment:01103"
149414. .152428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment:00701"
|30438. .144196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment:01545"
155011. .163649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment:01347"
152529. .154910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment:00557"
|18645. .130337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44297. .149313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="assembly_fragment:00873"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ector_side:right"
33170 c 31820 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.99e+03
46.00
76.47%
52.94%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2505 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  166876
9
4
4
0
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL Submitted (19-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Nov 19, 2002 this sequence version replaced gi:23194840.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projecte/rat/). Bach contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Karpathy, S., Kelly, S., Kelly, S., Kours, D., Noulbour, R., Nollyer, A., Kowas, C., Kraft, C.L., Lebow, H., Levan, J., Lewis, L., Li, Z., Liu, J., Lorensuhewa, L., Loulegged, H., Lozado, R.J., Lu, X., Ma, J., Maheshwari, M., Mahindartne, M., Mahmoud, M., Malloy, K., Mangum, A., Mahmoud, M., Malloy, K., Mangum, A., Martin, R., Martin, R., Martin, R., Martin, R., Martinez, E., Mangum, A., Mangum, B., Meleod, M.P., McNeill, T.Z., Meenen, E., Mangum, A., Morris, S., Munidasa, M., Murphy, M., Nair, L., Nankervis, C., Neal, D., Newton, N., Nguyen, N., Norris, S., Morris, S., Munidasa, M., Murphy, M., Nair, L., Nankervis, C., Neal, D., Newton, N., Nguyen, N., Norris, S., Nankervis, C., Nankervis, C., Netton, N., Suren, N., Norris, S., Parks, K., Pasterriak, S., Parks, K., Pasterriak, S., Paul, H., Perez, A., Perez, L., Pfannkoch, C., Plopper, F., Poindexter, A., Popovic, D., Primus, E., Pu, L. L., Puazo, M., Quiroz, J., Rachlin, E., Reeves, K., Regier, M.A., Reigh, R., Reilly, M., Ren, Y., Reuter, M., Rose, R., Ruiz, S., J., Sanders, M., Savery, G., Scherter, S., Scott, G., Shattman, S., Shen, H., Shetinle, M., Strong, R., Sutton, A., Sitter, C.D., Smajs, D., Snedthy, M., Strong, R., Sutton, A., Svatek, A., Tabor, P., Taylor, C., Taylor, S., Mallor, L., White, F., Wang, Q., Wang, S., Wang, J., Warren, R., Walz, X., White, F., Wang, Q., Wang, S., Walton, J., Warren, R., Walz, X., White, F., Wang, Q., Wang, S., Walton, J., Yakub, S., Yen, J., Yoon, L., Yoon, V., Yu, F., Shath, A., Smith, D.R., Holt, R.A., Smith, H.O., Weinston, J., Smith, H.O., Meinston, J., Smith, D.R., Holt, R.A., Smith, D.R., Holt, R.A., Smith, D.R., Holt, R.A., Smith, H.O., Meinston, J., Smith, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (17-APR-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA (bases 1 to 169693)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jackson, L., Jacob, L., Jiang, H., Johnson, B.,
NOTE: Estimated insert size may differ from sequence length
                                                                                                              Center project name: GUVZ
Center clone name: CH230-225F21
Center clone name: CH230-225F21
Center clone name: CH230-225F21
Center clone name: CH230-225F21
Assembly program: Phrap; version 0.990329
Consensus quality: 161764 bases at least Q40
Consensus quality: 163181 bases at least Q30
Consensus quality: 165085 bases at least Q20
Estimated insert size: 165089; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 169693)
                                                                            Quality coverage: 7x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center: Baylor College of Medicine Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Web site: http://www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Johnson, R., Jolivet, A.,
                                                                    TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 38
AP001548/c
LOCUS
                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                    AUTHORS
```

TITLE

COMMENT

```
US-10-081-935-2 (1-18) x AC118440 (1-169693)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
Pred. No.:
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90336 TCACACGCCTCATCAGCCTGCTTGCTGCGGGTGTGAGGGTGGCA 90292
               1 (bases 1 to 170270)
Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P., Fujiyama,A., Yada,T., Totoki,Y., Watanabe,H. and Sakaki,Y. Homo sapiens 170,270 genomic DNA of 18q21
Published Only in DataBase (2000)
2 (bases 1 to 170270)
Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P., Fujiyama,A., Yada,T., Totoki,Y., Watanabe,H. and Sakaki,Y.
                                                                                                                                                                                                                                                                                                     APOO1548.2 GI:8117386
HTG; HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                    DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens chromosome 18 clone RP11-83712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently
consists of 6 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      71664
71764
162673
162773
164076
164176
165369
165469
                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="wgs_contig"
69386. .71663
/note="wgs_contig"
complement(88241. .88650)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="clone_boundary clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66802. .68280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="CH230-255F21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . .16969:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71663: contig of 71663 bp in length
1763: gap of unknown length
162672: contig of 90909 bp in length
162772: gap of unknown length
164075: contig of 1303 bp in length
164175: gap of unknown length
165368: contig of 1303 bp in length
165368: contig of 193 bp in length
165468: gap of unknown length
166978: contig of 2510 bp in length
168078: gap of unknown length
168078: gap of unknown length
168078: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46.00
86.67%
66.67%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence:BZ115992"
2528 c 43376 g 40890 t
                                                                                                                                                                                                                                                                                                                                                                               17 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                 170270 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3424 others
                                                                                                                                                                                                                                                                                                                                                                                                        map 18q21, WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG 30-MAY-2000
```

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                            1 30841 contig of 30841 bp in length
30942 49995 contig of 20572 bp in length
50096 70667 contig of 20572 bp in length
70768 89290 contig of 1823 bp in length
105548 120373 contig of 1826 bp in length
1120474 133122 contig of 1826 bp in length
113043 147902 contig of 18279 bp in length
113304 147902 contig of 4599 bp in length
1143003 152506 contig of 4599 bp in length
115800 158705 contig of 3093 bp in length
115800 162039 contig of 3093 bp in length
116401 164114 contig of 2906 bp in length
116402 106502 contig of 2479 bp in length
116412 106502 contig of 2479 bp in length
116413 169081 contig of 2479 bp in length
116412 170270 contig of 2479 bp in length
116412 170270 contig of 2479 bp in length
116413 170270 contig of 2479 bp in length
116415 170270 contig of 2479 bp in length
116416 170270 contig of 2479 bp in length
116417 170270 contig of 2479 bp in length
116418 170270 contig of 2479 bp in length
116419 170270 contig of 2479 bp in length
116403 169081 contig of 2479 bp in length
116404 169081 contig of 2479 bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (24-MAR-2000) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); Kitasato Univ., 1-15-1 Kitasato, Sagamihara, Kanagawa 228-8555, Japan (E-mail:hattori@gsc.riken.go.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-42-778-9923, Fax:81-42-778-9924)
On May 30, 2000 this sequence version replaced gi:7340850.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: This is a 'working draft' sequence. It currently consists of 17 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as soon as it is available and the accession number will be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequencing vector: PCR products; 100% of reads Sequencing vector: PCR products; 100% of reads Chemistry: Dye-terminator ET-amersham; 100% of reads Assembly program: Phrap; version 0.990329
Consensus quality: 162012 bases at least Q30 Consensus quality: 165830 bases at least Q20 Consensus quality: 167538 bases at least Q20 Consensus quality: 167538 bases at least Q20 Insert size: 168670; sum-of-contigs Quality coverage: 5.46x in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center project name: HumDraft18 Center clone name: RP11-83712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Web site: http://hgp.gsc.riken.go.jp/
Contact: hattori@gsc.riken.go.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center code: RIKEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center: RIKEN Genomic Sciences Center (GSC)
                               30842
49946
50096
70668
70768
89291
105448
1055448
120374
133153
                                                                                                                            105547:
120373:
                                                                                                                                                                                                                                                                                                                                                                  30841:
30941:
49995:
                                                                                                                                                                                                                                                                                                                                            50095:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Project Information
                                                      gap of 100 bp

contig of 20572 bp in length

gap of 100 bp

contig of 18523 bp in length

gap of 100 bp

contig of 16057 bp in length

gap of 100 bp

contig of 16057 bp in length

gap of 100 bp

contig of 14826 bp in length

gap of 100 bp

contig of 18679 bp in length
                                                                                                                                                                                                                                                                                                                                                                  contig of 30841 bp in length
gap of 100 bp
contig of 19054 bp in length
   gap of contig
   100 bp
of 9951
bp in length
                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                         US-10-081-935-2 (1-18) x AP001548 (1-170270)
                                                                                                                                                                                                            Score:
                                                                                                                                                                                                                                      Pred. No.:
                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143204
143304
147903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   152507
152607
155700
155800
158806
158806
162040
162140
164215
164215
166503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            148003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89391. .105447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment"
152607. .155699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism≃"Homo sapiens"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                        note="assembly_fragment"
|69182. .170270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="assembly_fragment"
|64215...166502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
|62140. .164114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly
58806. .162039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
143304. .147902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="genomic_DN/db_xref="taxon:9606"
/chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                     note="assembly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66603.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_fragment"
55800. .158705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_fragment clone_end:SP6 vector_side:right" 33253. .143203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_fragment clone_end:T7 vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone="RP11-837I2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             map="18q21"
                                                                                                                                                                                                                                                                                                                                                               32818
                                                                                         46.00
93.75%
43.75%
56.10%
                                                                                                                                                                                                                                      9.17e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169081: contig of 2479 bp
169181: gap of 100 bp
170270: contig of 1089 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         143303:
147902:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .58705:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .89290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .49995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .133152
                                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of 100 bp in gap of 2479 bp in gap of 2479 bp in gap of 100 bp in gap 
                                                                                                                                                                                                                                                                                                                                                         mbly_fragment"
32593 g 51749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _fragment"
                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 4599
100 bp
100 bp
100 bp
100 bp
of 3093
100 bp
of 2906
                                                                                                               Indels:
                                                                                                                                                                                                                                                                                                                                                            ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                            1600 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in length
                                                                               170270
7
8
8
1
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
```

RESULT 39 AC090405

DEFINITION Pocas 밁 ર્

ACCESSION VERSION

KEYWORDS

ORGANISM

```
Dodge, S., Faro, S., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., McPheeters, R., Meddrim, J., Meneus, L., Mihova, T., Menga, V., McPheeters, R., Meddrim, J., Meneus, L., Mihova, T., Menga, V., Murphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C. H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Rette, R., Phunkhang, P., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schuer, S., Schuback, R., Seaman, S., Severy, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Strauss, N., Subramanian, A., Talamas, J., Teffaye, S., Theodore, J., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Zainoun, J., Direct, Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (17-FEB-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On May 27, 2001 this sequence version replaced gi:12958041. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Birren,B., Linton,L., Nusbaum,C., Lander,E., Allen,N., Anderson,S Barna,N., Bastien,V., Boguslavkiy,L., Boukhgalter,B., Brown,A., Camarata,J., Campopiano,A., Choepel,Y., Colangelo,M., Collins,S., Collymore,A., Cooke,P., DeArellano,K., Dewar,K., Diaz,J.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC090405

170413 bp DNA linear HTG 27-MAY-200: Homo sapiens chromosome 18 clone RP11-779H19 map 18, WORKING DRAFT SEQUENCE, 12 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              l (bases 1 to 170413)
Birren, B., Linton, L., Nusbaum, C. and Lander, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE,
AC090405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens chromosome 18, clone RP11-779H19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC090405
         NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla 16
::::::|||:::|||:::|||:::|||
TTGAGGTTTACTCACTCTCTCTCTTCCCTTCTGCAGGCTGGAATGGCA 58322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 170413)
                                                                                                                                                         Summary StaTistics
Sequencing vector: Plasmid; n/a; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 165803 bases at least Q40
Consensus quality: 167767 bases at least Q30
Consensus quality: 168769 bases at least Q20
Insert size: 157000; aggrose-fp
Insert size: 169313; sum-of-contigs
                                                                                                                Quality coverage: 8.9 in Q20 bases; agarose-fp Quality coverage: 8.3 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                Center project name: L127
Center clone name: 779_H_
                                                                                                                                                                                                                                                                                                                                                                                                       Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .2 GI:14210571
                                                                                                                                                                                                                                                                                                                                                                                       L1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG 27-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anderson, S.,
                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                         BASE COUNT
ORIGIN
    Query Match:
                                                                                         Pred. No.:
                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                              50853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32469
33331
33431
34638
34738
38949
39049
39049
43571
43671
162171
162271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27913
28013
28760
28860
29897
29697
30721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30821
31523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32369
                                                                                                                                                                              œ
                                                                                                                                                                                                clone_end:T7
vector_side:
                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
39049. .43570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="RP11-779H19"
/clone lib="RPCI-11 Human Male BAC"
1. .27912
                                                                                                                                                                                                                                                                                                              43671. .162170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          vector side:left"
28013. .28759
                                                                                                                                                                                                                                                                /note="assembly_fragment
162271. .170413
                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
34738. .38948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone_end:SP6
                                                                                                                                                                                                                                       note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                          33431.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31623.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
28860. .29596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9606"
/chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Homo sapiens"
|mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="assembly_fragment
                                                                                                                                                                       ector_side:right"
32105 c 32644 g
9.18e+03
46.00
93.75%
43.75%
56.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162170: gap of 100 bp
162270: gap of 100 bp
162270: gap of 100 bp
170413: contia of continuous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28012: gap of
28759: contig
28859: gap of
29596: contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34737: gap of 100 bp
38948: contig of 4211 bp in length
39048: gap of 100 bp
43570: contig of 4522 bp in length
43670: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27912: contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30720
                                                                                                                                                                                                                                                                                                                                                                                                                                          .34637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of contig
                                                                                                                                                                         Q
                                         Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 100 bp
ig of 737 bp in length
of 100 bp
ig of 1024 bp in length
                    Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100 bp
of 747 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100 bp
of 1207 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 bp
of 862 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100 bp
of 746 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 27912 bp in length
                                                                                                                                                                           53709 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                           1102 others
```

0 1 8

COMMENT

JOURNAL TITLE JOURNAL REFERENCE

AUTHORS

REFERENCE AUTHORS

TITLE

```
RESULT 40
AC134519
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB:
      Query Match:
DB:
                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x AC090405 (1-170413)
                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Consensus quality: 173858 bases at least Q40
Consensus quality: 174094 bases at least Q30
Consensus quality: 174162 bases at least Q30
Consensus quality: 174162 bases at least Q20
Estimated insert size: 174000; agarose-fp estimation
Estimated insert size: 174000; agarose-fp estimation
Quality coverage: 11.95 in Q20 bases; agarose-fp estimation
Quality coverage: 11.67 in Q20 bases; sum-of-contigs estimation.
* NOTE: This is a 'working draft' sequence. It currently
* consists of 1 contigs. The true order of the pieces
* is not known and their order in this sequence record is
* arbitrary. Gaps between the contigs are represented as
* runs of N, but the exact sizes of the gaps are unknown.
* This record will be updated with the finished sequence
* as soon as it is available and the accession number will
* be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Cri
Mammalla; Eutheria; Primates; Cal
1 (bases 1 to 174171)
DOE Joint Genome Institute.
Sequencing of Human Chromosome 5
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Project Information
Center Project Name: 1547620
Center clone name: RPCI-11_659C12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC134519
AC134519.1 GI:23334701
AC134519.1 GI:23334701
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ACTIVEFIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens chromosome 5 clone RP11-659C12, SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Center: Joint Genome Institute
Center Code: JGI
Web site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (27-SEP-2002) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 174171)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (human)
                                                                                                                                                                                   a
                                                                                                                                                                         /clone="RP11-659C12"
/clone_lib="RPCI human BAC library 11"
30550 c 30653 g 57679 t
                                                                                                                                                                                                                                       /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="5"
                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
1. .174171
  9.39e+03
46.00
81.25%
56.25%
56.10%
                                                                                                                                                                                                                                                                                                                                                         174171: contig of 174171 bp in length.
  Conservative: Mismatches: Indels: Gaps:
                                                                                Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
174171
9
4
3
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HTG 27-SEP-2002
```

```
á
                                 US-10-081-935-2 (1-18) x AC134519 (1-174171)
```

Search completed: November 13, 2003, 12:34:37 Job time: 2171 secs

밁

```
Command line parameters:

-MODEL=frame+ p2n.model -DEV=xlh
-Q=/cgn2_1/USPT0_smodel -DEV=xlh
-Q=/cgn2_1/USPT0_smodel -DEV=xlh
-Q=/cgn2_1/USPT0_smodel -DEV=xlh
-Q=/cgn2_1/USPT0_smodel -DEV=xlh
-Q=/cgn2_1/USPT0_smodel -QEVFIX=rge -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0
-DESCENDID -QEVT=fastap -SUFFIX=rge -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0
-UNITS=bite -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-DCCALIGN=200 -THR_SCORE=pct -THR_MAX=100 -THR_MIN=0 -ALIGN=40 -MODE=LOCAL
-UNITSTED -NORM=ext -HEAPSIZ=500 -MINLEN=0 -MAXLEN=200000000
-USER=US10081935 @CGN 1 1 2372 @runat 04122003 134829 10475 -NCPU=6 -ICPU=3
-NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG
-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPDP=10 -XGAPDXT=0.5 -FGAPOP=6
-FGAPEXT=7 -YGAPCOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            December 6, 2003, 00:08:38 ; Search time 2382 Seconds (without alignments) 3331.850 Million cell updates/sec
               2888711 seqs, 20454813386 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenEmbl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MQFSHALIALVAAGLASAQL......NVRASVGGIAAALLGLAAYL 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-081-935-4
1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
gb_ph: *
gb_ph: *
gb_ph: *
gb_ph: *
gb_pr: *
gr: *
gb_pr: *
gb_pr: *
gb_pr: *
gb_pr: *
gb_pr: *
gr: *
gb_pr: *
gr: *
gr: *
gr: *
gr: *
gr:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_in:*
gb_htg:*
gb_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.0
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5777422
```

```
em_htg_mus:*
em_htg_pln:*
em_htg_rod:*
em_htg_mam:*
em_htg_vrt:*
em_htg_vrt:*
em_htgo_hum:*
em_htgo_mus:*
                                                                                                      em_htg_hum: *
em_htg_inv: *
em_htg_other: *
                                                                                                                                        em_vi:•
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

	0000		100			ი ი	Result No.
444	38 39 40	100000 10000 10000	30987654	117	1112110	440068	ult No.
<b>თ</b> თ		160.5 160.5 160.5 159.5 158			182.5 175 175 175 175 175 172.5 172.5	1023 1023 1023 970 970 206.5 186	Ö
5.444	4444				66677777	100.0 100.0 94.8 94.8 20.2 18.2 18.1	nery
52 13	9636 9654 15148 251908	9435 110000 237019 124636 259772 9636 9636	225849 4675 110000 222896 4284 252801 300029		3655 2455 2455 2821 2821 2821 1011 3067 207870	1201 1234 1234 1435 3821 97478 97478 2960 1470	gth
8 14 8	νωωσ	<b>σωνονν</b>		N & & & & P	21163633	88884494	DB
AC111805 TTV1VP TTV1TP AF254145	195887 PFAS230A AE001393 AC094522	AF269242 AC109525_0 AC1094443 AP000721 AP000721 PFAF5230X AR178096	AC098905 DDU20608 AC116957 0 AC119773 DDU20661 AC095211 AC095215	CASR69XYN2 AF093132 AF093132 AC128838 AV16602 AF080221 AF254147 AC095003	DDISGSPB TNAF000605 TNAF000606 TNAF000606 AR129836 CTH420770 CTCH1AGEN AC115017	CIU39835 CIU32518 CIU51200 AP013256 AC105929 AY057052 AR140164 AF319782	ľ
11805 Rattus 4717 Thermop: 4855 Thermop: 54145 Candid	Sequence Plasmodiu 3 Plasmod 2 Rattus	AF259242 Plasmodiu AC109525 Rattus no AC094443 Rattus no AP000721 Homo sapi AC106943 Rattus no L08135 Plasmodium AR118096 Sequence	8905 Rattus 08 Dictyoste 6957 Dictyos 6957 Rattus 9773 Rattus 61 Dictyoste 5211 Rattus	24 Caldice 32 Pneumoc 38 Rattus 38 Ragnapo 02 Magnapo 01 Candida 47 Candida 47 Candida	ictyosteli Trichoplu Sequence Trichoplu Seguence Seguence Clostridi thermocel	U39835 Coccidioide U32518 Coccidioide U51200 Coccidioide AF013256 Coccidioi AC105929 Magnaport AY057052 Mamestra AR140164 Sequence AF319782 Callitric	ription

ALIGNMENTS

```
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Si
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CIU39835
LOCUS
DEFINITION
                                    á
                                                                                                    밁
                                                                                                                                      Ş
                                                                                                                                                                                   В
                                                                                                                                                                                                                                       ક
                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores: Pred. No.: Score:
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-4 (1-194) x CIU39835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
     392
                                                                                                    332
                                                                                                                                                                                                  272
                                                                                                                                                                                                                                                                                                      212
                                                                                                                                                                                                                                                                                                                                                                                                        152
                                               81
                                                                                                                                                   13
                                                                                                                                                                                                                                                  41
                                                                                                                                                                                                                                                                                                                                                   21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 1201)
2 (bases 1 to 1201)
Dugger,K.O. and Galgiani,J.N.
Direct Submission
Submitted (01-NOV-1995) Kris O.
Submitted (01-NOV-1995) Kris O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and Galgiani, J.N.
Cloning and sequence analysis of the cDNA for a Coccidioides immitis with immunogenic potential Biochem. Biophys. Res. Commun. 218 (2), 485-489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coccidioides posadasii
Coccidioides posadasii
Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.

(bases 1 to 1201)
Dugger, K.O., Villareal, K.M., Ngyuen, A., Zimmermann, C.R., Law, and Galgiani, J.N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COCCIDIOIDES immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U39835.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      U39835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complete
                                                                                                                                                                                                                                                                                                                              ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla 100
                                                                                                                              ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                ACTCGCTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAGCTCCCAAGGACAGATCACT
                                                                                                                                                                                                                               ThrArqLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                                                                    CCAGACATCCCACCTTGCGCTCCAACTGCTTCGTTGAGGCTCTCGGCAACGATGGCTGC
GACCAGTGCTCCAAGGCCGGTGTCCCAATTGACATCCCACCAGTTGACACCACCGCCGCT
                                                                                                 CCTTGCGTTGAGGAGGCCTGCCCTCTCGACGCCCGTATCTCCGTCTCCAACATCGTCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="immunoreactive spherule cell wall protein"
/protein_id="AAC49140.1"
/protein_id="AAC49140.1"
/db_xref="Gi:1161374"
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGAGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGAGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGAGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGNDGCTRLT
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFVEALGNDGCTRLT"
/translation="MQFSHALIALVAAGLASAQLPDIPCALNCFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="33 kDa apoglycoprotein"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:199306"
152: .736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Coccidioides posadasii"
/mol_type="mRNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:1161373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.57e-51
1023.00
100.00%
100.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201 bp rimmunoreactive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (1-1201)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Campbell,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA linear PLN 18-
cell wall protein mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Infectious Diseases, Tucson, AZ 85724, U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
194
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLN 18-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
451
                                                                                                 391
                                                                                                                                              80
                                                                                                                                                                                                  331
                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                              40
                                                                                                                                                                                                                                                                                                    271
                                                                                                                                                                                                                                                                                                                                                                                                   211
                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
```

```
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 2
CIU32518
LOCUS
                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ર્શ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
Alignment
                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                   SGS
                                                                                    polyA_site
 Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                 78223
On Fe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eu
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 1334)
                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (27-JUL-1995) Texas Research Immunology, 2303 S.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zhu,Y., Yang,C., Magee,D.M. and Cox,R.A. Molecular cloning and characterization o antigen 2 cDNA [Infect. Immun. 64 (7), 2695-2699 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CIU32518 1234
Coccidioides immitis antigen
U32518 GI:1200179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cox, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8698497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96294782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Coccidioides posadasii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGGCATTGCTGCTGCTCCTCGGTCTCGCTGCCTACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTACCGCTGAGCCCACCGCTGAGCCGACTCATGAGCCCACCGAGGAGCCCACTGCCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAACTGCCTCCACCCCAGCTGAGTTCCCCAGGTGCTGGCTCCCAACGTCCGTGCCAGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAACCGGCACTGGCGGTGGTCCCCCACTGGCACCGGTTCCTTCACCGTCACTGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to
                                         252
                                                                                                                                                                                                                                                                                                                                                                                   USA
) 24, 1996 this sequence
Location/Qualifiers
                                                                                                 /product="antigen 2"
/protein_id="AAB18148.1"
/protein_id="AAB18148.1"
/db_xref="701:1200180"
/translation="MOPSHALIALVAAGLASAQUPDIPPCALNCFVEALGNDGCTRLT
/translation="MOPSHALIALVAAGLASAQUPDIPPCALNCFVEALGNDGCTRLT
/translation="MOPSHALIALVAAGLASAQUPDIPPCALNCFVEALGNDGCTRLT
/translation="MOPSHALIALVAAGLASAQUPDITCAAPE
PSETAETAETEEPTAEPTAEPTAEPTAEPTAEPTAFTAETEGGGVPTGTGSFTVTGR
PSETAETAEFTAEFTEEPTAEPTAEPTAEPTAEPTAETAGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                /gene="Ag2"
175. .759
                                                                                                                                                                                                      /gene="Ag2"
/note="major T-cell-reactive
spherule cell walls"
/codon_start=1
                                         /gene="Ag2"
/note="21 A nucleotides"
383 c 277 g 322
                                                                                                                                                                                                                                                                                           1. .1234
                                                                                                                                                                                                                                                                                                      /strain="Silveira"
/db_xref="taxon:199306"
/cell_type="spherule"
                                                                                                                                                                                                                                                                                                                                                                     organism="Coccidioides
                                                                                                                                                                                                                                                                                                                                                      _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ညစ္ခ
                                                                                                                                                                                                                                                                                                                                                                                                                                            Center for Infectious . Military Drive, San A
                                                                                                                                                                                                                                                                                                                                                                                                                  version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Ag2) mRNA
                                                                                                                                                                                                                                                                                                                                                                     posadasii"
                                                                                                                                                                                                                                    component
                                                                                                                                                                                                                                                                                                                                                                                                                 replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ę,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eurotiomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                               gi:1184058
                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 04-NOV-1996 cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                               X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  691
```

```
CIUSIZOO
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
Score:
                                                                 JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-4 (1-194)
     FEATURES
                                   AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NO . .
                                                                                       Coccidioides posadasii

M Coccidioides posadasii

Coccidioides posadasii

Eukaryota; Fungi; Ascomycota; Pezizomycotir

Onygenales; mitosporic Onygenales; Coccidic

1 (bases 1 to 1435)

Zhu, Y., Yang, C., Magee, D.M. and Cox, R.A.

Coccidioides immitis antigen 2: analysis of

Gene 181 (1-2), 121-125 (1996)

97128779
                                                                                                                                                                                                                                                                                                                           655
                                                                                                                                                                                                                                                                                                                                                                      595
                                                                                                                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                                                                                                535
                                                                                                                                                                                                                                                                                                                                                                                                                                                            475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415
                                                                                                                                                                                                                                                                                 715
                                                                                                                                                                                                                                                                                                                                                161
                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        235
                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ب
  Submitted (12-MAR-1996) Rebecca A. Cox,
Texas Center for Infectious Disease, 230
Antonio, TX 78223, USA
Location/Qualifiers
                                           2 (bases 1 to 1435)
Zhu, Y., Yang, C., Magee, D.M.
Direct Submission
                                                                                                                                                                                                             Coccidioides immitis U51200
                                                                                                                                                                                                   U51200.1
                                                                               8973319
                                                                                                                                                                                                                                                                               ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGACATCCCACCTTGCGCTCTCAACTGCTTCGTTGAGGCTCTCGGCAACGATGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTGCCCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                          CCAACTGCCTCCACCCCAGCTGAGTTCCCAGGTGCTGGCTCCAACGTCCGTGCCAGCGTT
                                                                                                                                                                                                                                                                                                                                                                      CCAACCGGCACTGGCGGTGTCCCCCACTGGCACCGGTTCCTTCACCGTCACTGGCAGA
                                                                                                                                                                                                     GI:1256443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.61e-51
1023.00
100.00%
100.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CIU32518
                                                                                                                                                                                                                        antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-1234)
                                                                                                                                                                                                                                   1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                        and
                                                                                                                                                                                                                        2 bp
                                                                                                                                             Pezizomycotina; Eurotiomycetes; ales; Coccidioides.
                                                                                                                                                                                                                        protein
                                                        Cox, R.A.
                         2303
                                                                                                                                                                                                                         gene,
                        Clinical Investigation, 03 S.E. Millitary Dr., San
                                                                                                               ō,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1234
194
                                                                                                                                                                                                                                   linear
                                                                                                             gene
                                                                                                                                                                                                                         complete
                                                                                                               and
                                                                                                                                                                                                                                     PLN 14-JAN-1997
                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                      654
                                                                                                                                                                                                                                                                                                                                                                                          160
                                                                                                                                                                                                                                                                                                                                                                                                                594
                                                                                                                                                                                                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                            534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment :
Pred. No.:
                            밁
                                                    S
                                                                            밁
                                                                                            S
                                                                                                                       밁
                                                                                                                                       á
                                                                                                                                                           밁
                                                                                                                                                                                  ঠ
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x CIU51200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
            161
                                                                                                  121
                                                                                                                                             101
                                                                                                                                                                   595
                                                                                                                                                                                                            535
                                                                                                                                                                                                                                                        475
                                                                                                                                                                                                                                                                                                    415
                                                                                                                                                                                                                                                                                                                                                355
                                                                                                                                                                                                                                                                                                                                                                                          295
                                                                                                                                                                                                                                                                                                                                                                                                                                     235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175
                                                                                                                                                                                      18
                                                                                                                                                                                                                                   74
                                                                                                                                                                                                                                                                                                                        $5
                                                                                                                                                                                                                                                                                                                                                                    35
                                                                                                                                                                                                                                                                                                                                                                                                                28
                                                                                                                                                                                                                                                                                                                                                                                                                                                           21
ProThrAlaSerThrProAlaGluPheProGlyAlaGlySerABnValArgAlaSerVal
                                           ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArg
                                                                                      ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal
                                                                                                                                  ProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGlu
                                                                                                                                                                   GACCAGTGCTCCAAGGCCGGTGTCCCAATTGACATCCCACCAGTTGACACCACCGCCGCT
                                                                                                                                                                              AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                                                                                                                                                                                            AAAGAAGTCGAAATGGCAGCTAACATGTTAAAAAATCCAGCCGTCTCCAACATCGTCGTT
                                                                                                                                                                                                                                                                                                   CCCGAGCCATCCGAGACCGCTGAGCCCACCGCTGAGCCAACCGAGGAGCCCACTGCCGAG
                                                                                                                                                                                                                                                        AAGTGAAGCGACACCAAATTCTTGCATCTCGCCCAAGGATGGGATAAGATGAGAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                           ACGAGAAGGACTCTTGGAATGCTAACGGCTTGATGCTAGCTCAACTGCTTCGTTGAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGACATCCCACCTTGCGCTGTATGTTCGAACCTTTTGTGTGGAACCTCACGGAGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="antigen 2"
/protein_id="antigen 2"
/protein_id="acc19612.1"
/db_xref="GI:125444"
/translation="MQPSHALIALVANGLASAQLPDIPPCALNCFVEALGNDGCTRLT
/translation="MQPSHALIALVANGLASAQLPDIPPCALNCFVEALGNDGCTRLT
DFKCHCSKPELPGQITPCVEEACPLARISVSNIVVDQCSKAGVPIDIPPVDTTAAPE
PSETARPTAEPTEPTAEPTAEPTAEPTAEPTAPTGTGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
a 414 c 327 g 361 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Coccidioides posadasii"
|mol type="genomic DNA"
|strain="Silveira"
|db xref="taxon:199306"
|join[175. .255,334 . .472,575 . .939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.3e-48
970.00
76.38%
75.98%
94.82%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-1435)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps:
                                                                                                                                                                                                                         -----LeuAsnCysPheValGluAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 939)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2601
            180
                                                      160
                                                                                                  140
                                                                                                                                                                                      100
                                 834
                                                                                                                        714
                                                                                                                                             120
                                                                                                                                                                   654
                                                                                                                                                                                                             594
                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                        534
                                                                                                                                                                                                                                                                                                     474
                                                                                                                                                                                                                                                                                                                         73
                                                                                                                                                                                                                                                                                                                                                                    54
                                                                                                                                                                                                                                                                                                                                                                                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                     294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234
                                                                            774
                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                414
                                                                                                                                                                                                                                                                                                                                                                                          354
                                                                                                                                                                                                                                                                                                                                                                                                                                                            27
```

Ş

В á В 유

밁 5 В Ş 밁 Ś á 밁 á 밁 Ś 밁 á

밁

```
RESULT 4
AF013256
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                                                        В
                                                                                                                                                                                                                                                                                                                          BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                              Ş
                                                                                                                       á
                                                                                                                                                                                                          Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                        Score:
                                                                                                                                                                                                                                                                                      Alignment Scores:
                           밁
                                                                                                                                                        US-10-081-935-4 (1-194) x AF013256
                                                                                                                                                                                                                                                                           Pred.
                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                        COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                           Х
О
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        835
                                                                                         968
                           956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          895
                                                         21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peng,T., Orsborn,...

Direct Submission

Submitted (09-JUL-1997) Infectious Disease,

1501 N. Campbell, Tucson, AZ 85724, USA

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       spherule maturation
J. Infect. Dis. 179 (2), 518-521 (1999)
99094977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peng, T., Orsborn, K.I., Orbach, M.J. and Galgiani, J.N. Proline-rich vaccine candidate antigen of Coccidioides immitis: conservation among isolates and differential expression with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Coccidioides posadasii
Eukaryota; Fung1; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; micosporic Onygenales; Coccidioides.
1 (bases 1 to 3821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AF013256.1 GI:2331288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF013256
Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF013256
                                                                                      CCAGACATCCCACCTTGCGCTGTATGTTCGAACCTTTTGTGTGGAACCTCACGGAGAGGA 1015
                                              ProAspIleProProCysAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGGCATTGCTGCTGCTCTCGGTCTCGCTACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAACTGCCTCCACCCCAGCTGAGTTCCCAGGTGCTGGCTCCAACGTCCGTGCCAGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 3821)
ng,T., Orsborn,K.I.,
                                                                                                                                                                                                                                                                                                       /note= aut=1
/codon_statt=1
/product="proline_rich_antigen"
/product="proline_rich_antigen"
/protein_id="AAB66894.1"
/doctein_id="AAB66894.1"
/db_xrefe="G1:231289"
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCEVEALGNDGCTRLT
/franslation="MQFSHALIALVAAGLASAQLPDIPPCALNCEVEALGNDGCTRLT
DFKCHCSKPELPGQITPCVEEACPLDARISVSNIVVDQCSKAGVPIDIPPVDTTAAPE
PSETAEPTAEPTAEPTAEPTEPEBETAVPTGGTGGGVPTGTGSFTVTGR
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
903 g 1013 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Coccidioides p
/mol type="genomic DNA"
/strain="Silveira"
/db_xref="taxon:199306"
737. .2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      join(737. .976,1055. .1193,1296.
/genee"PRA"
/product="proline rich antigen"
join(896. .976,1055. .1193,1296.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="PRA"
/note="antigen 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="PRA"
join(737. .!
                                                                                                                                                                                                        5.68e-48
970.00
76.38%
75.98%
94.82%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3821
proline
                                                                                                                                                         (1-3821)
                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp
rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      posadasii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and Galgiani,J.N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                       3821
193
1
0
60
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (PRA) gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .2126)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLN 22-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         o
F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          894
                                                       27
                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                           AC105929/c
LOCUS
                                                                                                                                                  TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73
Submitted (11-JAN-2002) Plant Pathology - Fungal Genomics Laboratory, North carolina State University, 840 Main Camp Raleigh, NC 27606, USA
**NOTE: This is a 'working draft' sequence. It currently consists of 7 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown.
** This record will be updated with the finished sequence
                                                                                                                                                  2 (bases 1 to 97478)
Dean,R.A. Dr, Mitchell,T. Dr,
Direct Submission
                                                                                                                                                                                                                                                 Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes
Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
1 (Dases 1 to 97478)
Dean,R.A. Dr, Mitchell,T. Dr, Thon,M. Dr, Brown,D.E., Taro,A.
                                                                                                                                                                                                                                                                                                                   HTG; HTGS PHASE1.
Magnaporthe grisea
Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                 AC105929 97478 bp DNA linear Magnaporthe grisea chromosome 7 clone 11K22, *** ( PROGRESS ***, 7 unordered pieces.
                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                   AC105929.1 GI:18129402
                                                                                                                                                                                                                  Magaporthe Grisea chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACCAGTGCTCCAAGGCCGGTGTCCCAATTGACATCCCACCAGTTGACACCACCGCCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGAAGTCGAAATGGCAGCTAACATGTTAAAAAATCCAGCCGTCTCCAACATCGTCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LeuProGlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIle---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCGGCATTGCTGCTGCTCCTCGGTCTGCCTACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAACTGCCTCCACCCCAGCTGAGTTCCCCAGGTGCTGGCTCCAACGTCCGTGCCAGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAACCGGCACTGGCGGTGGTCCCCACTGGCACCGGTTCCTTCACCGTCACTGGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGTGAAGCGACACCAAATTCTTGCATCTCGCCCAAGGATGGGATAAGATGAGAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCCAGGACAGATCACTCCTTGCGTTGAGGAGGCCTGCCCTCTCGACGCCCGTATCTGT 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCGGCAACGATGGCTGCACTCGCTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCysSerLysProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTACCGCTGAGCCCACCGCTGAGCCGACTCATGAGCCCACCGAGGAGGCCCACTGCCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCGAGCCATCCGAGACCGCTGAGCCCACCGCTGAGCCAACCGAGGAGCCCACTGCCGAG
                                                                                                                                                                    Thon, M. Dr
                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SerValSerAsnIleValVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1657
                                                                                                                                                                    Brown, D.
                                                                                                                                                                                                                                                                                                  Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCING IN
                                                                                                                     Campus
                                                                                                                                                                                                                                                   Taro, A. and
                                                                                                                   Drive
```

1555 160 1495

1615

140

120 1375 100 1315 80

1435

1255

73

1135

54

1075

34

complete cds. INV 29-OCT-2001

```
US-10-081-935-4 (1-194) x AC105929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82750 TCTTCCCTCCCCGCCTGCGCTGTCGACTGTCTGAGCAGCGCTATTGCCTCTTCCGGCTGC
                                                                                                                                                                                                             82465
                                                                                                                                                                                                                                                                                     82522
                                                                                                                                                                                                                                                                                                                                                              82573
     176 lArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeu 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scores:
                                                                                                                                                                                                                                                                                                                         86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                                                79
                                                           -----GGCTCTCCCTCTGCCACCACGCCTGCC------GGCTCTGGCGCCTCCGC 82308
                                                                              rValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnVa 176
                                                                                                                                                                                                        ATGCCCTCCATGTCGACTGGCGTCCCCAAGACCAACGGC-ACCTCTGCTGCCTCTCCCAC
                                                                                                                                                                                                                                                                               AGCGCCGCCCTACCACCCACCCACG---CCGGCAACTCTTCGGCCTCGGCCAGCACCACC 82466
                                                                                                                                                                                                                                                                                                                                                        AACGGCGAGGCCCTGTGCAAGAACGTCCCCACCGCTGTTCCTACCTCCT------CC
                                                                                                                                                                                                                                                                                                                                                                                                                               GCTACTCCTTGCCTGCCCAAGTGCACCGACCCTGGCGACCTCTCCAAGGCTGCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACGGC---ACCGACGTCGCCTGCCAGTGTGGTGAGAAGAAGAAGAAGACGTTGCCAACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ThrArgLeuThrAspPheLysCysHisCys-----SerLysProGluLeuProGlyGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGTTCTCC---ATCATCCTCGCCGCCGCCGCCGCCGCCGTCGTCGCTCAGGACCTC
                                                                                                                                  CGCTTCCCCACCAGCACCAGCGGCGGCGCAGCAGCAGCAGCGGCACCAGCGGC-----
                                                                                                                                                                 rAlaValProThrGlyThrGlyGlyGlyVal-----ProThrGlyThrGlySerPheTh
                                                                                                                                                                                                                                          rAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProTh 138
                                                                                                                                                                                                                                                                                                                  rAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProTh 118
                                                                                                                                                                                                                                                                                                                                                                                         -ValValAspGlnCysSerLysAlaGlyValProlleAspIleProProValAspThrTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 be
be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              soon as it preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4813
4913
13063
13163
131713
34713
34813
57165
57265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Magnaporthe grisea"
/mol type="genomic DNA"
/db_xref="taxon:148305"
/chromosome="7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        clone="11K22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . .97478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24891 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.0409
206.50
47.69%
33.33%
20.19%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49: contig of 49 bp in length
149: gap of unknown length
347: contig of 198 bp in length
447: gap of unknown length
4812: contig of 4365 bp in length
4812: gap of unknown length
4912: gap of unknown length
13062: contig of 8150 bp in length
13162: gap of unknown length
13162: gap of unknown length
34712: contig of 21550 bp in length
34712: gap of unknown length
57164: gap of unknown length
57164: contig of 22352 bp in length
57264: gap of unknown length
57264: gap of unknown length
97478: contig of 40214 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1-97478)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Θ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
28
21
22
10
                                                                                                                                                                                                        82407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82691
                                                                                                                                                                                                                                                                                                                                                                                                                               82574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40
                                                                                                                                  82352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82751
 Ś
                                      밁
                                                                         ફ
                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
AY057052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                         US-10-081-935-4 (1-194) x AY057052
                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                        Alignment
Pred. No.:
                                                                                                                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82307 C---GCCACTATCGGC-----GCTGCTGCTCTTCTTGGTCTT 82274
                                                                                                                                                                                                                                                            Scores:
                                        162
   42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AY057052
Mamestra
AY057052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (24-SEP-2001) Molecular Genetics, Agriculture and Agri-Food Canada, 107 Science Place, Saskatoon, SK S7N 0X2, Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chamankhah, M., Karkut, T., Shi, X., Hemmingsen, S.M., Alting-Mees, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Noctuoidea; Noctuidae; Hadeninae; Mamestra.

1 (bases 1 to 2960)
Shi.X., Karkut, T., Chamankhah, M., Alting-Mees, M., Hemmingsen, S.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mamestra configurata (bertha armyworm)
Mamestra configurata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5' RACEing across a bridging
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AY057052.1 GI:16508142
ArgLeuThrAspPheLysCysHis--
                                  GACTGTCCTCCTGCTGAAGTTCACTTCTTGCTGCCC-----CACGAATACGACTGCACC
                                                                   AspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThr 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 2960)
                                                                                                                                                                                                                                                                                                                  791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hegedus, D.D.
                                                                                                                                                                                                                                                                                                                                                                               2960 bp mRNA linear configurata intestinal mucin (MUCIN) mRNA,
                                                                                                                                                                                                                                                                                                                                                  VVTNAPTVAPVPDPTTVGTTANPACPECLPGPVNPADKCKEECNVAPWAHAECDKYYT
CVGDEFRVNACAEGLHFNPSTLTCDFICNAGCVRNIPQITRHVEGMLMFIPHDFNNRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="MUCIN"
60. .2495
                                                                                                                                                                                                                                                                                                                                   VIOLIEHELNAEL'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="peritrophic membrane structural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="MUCIN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="midgut"
|. .2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mol_type="mRNA"
db_xref="taxon:174822"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Mamestra configurata"
                                                                                                                                                             0.0255
186.00
39.75%
31.68%
18.18%
                                                                                                                                                                                                                                                                                                                ი
                                                                                                           (1-2960)
                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oligonucleotide (BO-5'
                                                                                                                                                                                                                                                                                                                705
```

Alignment S Pred. No.:

Score:

BASE COUNT

, O'grady,M., Braun,L. and

Visal,S., Hegedus,D.

FEATURES

source

Ś

밁 á 밁 Ś 용 á

ঠ

밁 Ś 멍 Ş 밁 Ś 밁 ર્ В

2960 51 13 77 20

.--Сув 50

215

1 others

밁

σ

```
Best Local S:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 7
AR140164
LOCUS
                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                       TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                          Ś
                                                                               밁
                                                                                                    Ş
                                                                                                                                                                                                  Alignment
Pred. No.
                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
 밁
                S
                                       밁
                                                                                                                         US-10-081-935-4 (1-194) x AR140164
                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   216
                                                                                                                                                                                                                                                                                                                                                                                                                                                       630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         166
                                                                                 424
 544
                   122
                                        484
                                                             102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51
                                                                                                     83
                                                                                                                                                                                                                                                                                                                                                                             Sequence 1 1
AR140164
AR140164.1
                                                                                                                                                                                                                                                                      i (bases 1 to 1470)
Bj.o slashed.rnvad,M.Eskelund., Hatakeyan
Bj.o slashed.rnvad,M.Eskelund., Hatakeyan
Nielsen,J.Bech.
Endo-B-1,4-glucanases from saccharothrix
Patent: US 6207436-A 1 27-MAR-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                Unknown
                                                                                                                                                                                                                                                                                                                                                          Unknown.
                                                                                                                                                                                                                                                                                                                                      Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                            AR140164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaGlyValProIleAspIleProProValAspThrThrAlaAlaProGluProSerGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProLeuAsp-----AlaArgIleSerValSerAsnIleValValAspGlnCysSerLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SerLysProGluLeuProGlyGlnIleThrProCysVal-----GluGluAlaCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTTC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAGCAGCTCCTACTGCAGCTCCAACGGCTGCTCCCACCGCAGCTCCTACTGCAGCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlyGlyValProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThr 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrAlaGluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTGCGGCCCCTACCGCTGCACCCACTGCGCCCCCTACCGCTGCACCCACTGCAGCCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAGCCGCACCCACTGCAGCTCCTACAGCCGCTCCCACTGCAGCCCCTACCGCTGCACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGGTACTGAGTTCAACGCTGAGATCCAGGTTTGTGTTCATCCAAGCTCTTCAGGATGC
GluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluPro
                                                                                 TGCAACGGTGCGGTCGGTGGCCCGACGACGACGCCGACCCCGACCCCGGAGCCC
                                                                                                    CysSerLysAla---
                                                                                                                                                                                                                                          242
                                                                                                                                                                                                                                                                                                                                                                                                                                                       632
                                                                                                                                                                                                                                          /organism="unknown"
563 c 489 g
                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                        0.0143
185.50
52.17%
47.83%
18.13%
                                                                                                                                                                                                                                                                                                                                                                               GI:14482660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::: |||
-TACTACTGTGAATATGGTCTGAAGTATATCGAACCCAGAAACTGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                   patent
                                                                                              -GlyValProIleAspIleProProValAspThrThrAlaAlaPro
                                                                                                                                                                                                                                                                                                                                                                                                    SU
                                                                                                                         (1-1470)
                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                    6207436.
                                                                                                                                                                                                                                            176
                                                                                                                                                                                                                                                                                                                  Hatakeyama
                                                                                                                                                                                                                                            c
                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                              1470
44
4
4
2
2
                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                  Schulein, M.
                                                                                                                                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                              16-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67
                                                            121
                                                                                 483
                                                                                                      101
                                        543
                                                                                                                                                                                                                                                                                                      R...'ERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                    PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 8
AF319782/c
                                                                                                                                                                                                                                         REMARK
COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                CDS
                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      142
```

```
2 (bases 1 to 149696)
Rivailler,P., Cho,Y.G. and Wang,F.
Complete genomic sequence of an epstein-barr virus-related herpesvirus naturally infecting a new world primate: a defipoint in the evolution of oncogenic lymphocryptoviruses
J. Virol. 76 (23), 12055-12068 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gammaherpesvirinae; Lymphocryptovirus 1 (bases 1 to 105145)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Callitrichine herpesvirus 3
Callitrichine herpesvirus 3
Viruses; dsDNA viruses, no RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Callitrichine
AF319782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF319782.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence update by submitter On Nov 7, 2002 this sequence Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Harvard Medical School, C
Boston, MA 02115, USA
4 (bases 1 to 149696)
Rivailler,P., Cho,Y. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            An Epstein-Barr-related herpesvirus from marmoset lymphomas
Proc. Natl. Acad. Sci. U.S.A. 98 (3), 1224-1229 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cho, Y., Ramer, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Boston, MA 02115, USA
Sequence update by submitter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (04-JUN-2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and Wang, F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Harvard Medical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2414947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGTCGTACCGCGCCTGGCAGGCGGCCAGCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oThrAlaSerThrProAlaGluPheProGlyAla 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrGlyThrGlyGlyValProThrGlyThrGlySerPhe-ThrValThrGlyArgPr 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGCCCGAGCCCACGATGCCGCCGGTCCAGGCCGGTCAGTTCCACGTCGACACCACGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1
/product="C7"
/product="C7"
/product="C7"
/product="C1"
/product="C1"
/product="C1"
/product="C1"
/product="C1"
/db_xref="C1":24762310"
/translation="MAGHWYESVIPGLELCPLILPSLEWICSLLTFLUGHGANIVSAV
/translation="MAGHWYESVIPGLELCPLILPSLEWICSFILLSFILLSFILLSFILLSFILLFGTALLILPSCALLL
returnerityminmerrylhewithleritymintspillspillsvaciliossall
returnerityminterpogaeablogtalliumalcluvliutaiptdagiltve
Clecowtleichgirmicnwrgkltriiclkeclyglisaslsfgwyaflkgvtlptt
                                                                                                                                                                                         /product="C7"
complement(join(138637. .138818,138904.
139106. .139219,139294. .139458,139572.
139744. .139992,140075. .140167,140247.
                                                                                                                                                                                                                                                                                  /noTe="isolated from lymphoma"

Complement (join (13837. 13848,139572.

139106. 139294. 139498,139572.

139744. 139992,140075. 140167,140247.
                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Callitrichine
/mol_type="genomic DNA"
/strain="CJ0149"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (12-APR-2001)
                                                                                                                                                                                                                                                                                                                                                                       ġ.
                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . .149696
                                                                                                                                                                                                                                                                                                                                                                                                specific_host="Common marmoset"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:24762296
                                                                                                                                                                                                                                                                                                                                                                              xref="taxon:106331"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   105145)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              School,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rivailler, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    149696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Medicine,
Channing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Medicine, Brigham & Women's Hospital, Channing Laboratory, 181 Longwood Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wang, F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quink, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brigham & Laboratory,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CJ0149,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Herpesviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Garber, R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 circular
complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Women's Hospital,
, 181 Longwood Ave
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gi:13676640
                                                                                                                                                                                                  .139005,
                                                                                                                                                                                                                                                                                    .139005, .139661, .140485,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٧RL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 defining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Beier, D.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-NOV-2002
                                                                                                                                                                                                                                                                                           , 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    663
                                                                                                                                                                                                                                                                                         . 966))
                                                                                                                                                                                                       . 966))
```

gene

mRNA

CDS

```
/protein_id="AAK38209.1"
/protein_id="AAK38209.1"
/protein_id="AAK38209.1"
/protein_id="AAK38209.1"
/protein_id="AAK38209.1"
/translation="MOASPAPEDNLGSHCKVGPCGYLYEYPLDGFPIREASLLGTGYH
/translation="MOASPAPEDNLGSHCKVGPCGYLYEYPLDGFPIREASLLGTGYH
/translation="MOASPAPEDNLGSHCKYGPCHRDAYVFHNATAIPPV
FSGPCLELLGCDETREYVGYDAYSPPUDARETKVEEYFFSELDFSAYVGAAIVTEAFKE
RLYSGNLVVILSLKREVSIGGYASICIPLYDREVFGGAKSAVFNVALSKCMYETI
YTGLAGACHLLRAYDEFISAMEROSLHDDIKVPKVALLKEENAATLSHPESSAVMIUDT
ASCELATSYGPAMIDAVQEPFTGIRYDAMPVFEGCENEDARLKALHGFNALLAPHAAA
QIFSTNSVLYVSGVSKSTQGGRONTYNSFFITHGLGSLODGOTWDDONRQPVFSGWAGGPD
VTGSSGFGNYSVEHLVFAASFSPNLLARAYAYYLOFCQGOKSSLNQSHEIGSYVAGAAT
SCYCSLCEGSTPAVCLNTLFFRLRDRFPVTSTHRDPYVITGASGAYNETDFLGNFI
NFVDRDDDGORVEDERRYTYWQLNGNLIERLSRLGIDGOCNCERDFKTARDFMKLLKD
VDQAVDAEVVQFMGSNAKNNGYKDLKSCYHLIQYSCNPYAQAPCTVFLQLFYRSMF
TILQDIALFICMCYENDNPGLGGSAQEWLKGHYQTLCTNFRSLAVDKGTLTAKEVKVV
HEFFTSDVADLDAAIKGRVMVQRLTVRNSKVLMLCPKNLKIKNRIVFTGENSLLQNNF
IKSTAHRDNYIINGFYIKLLNNYHKVLFFETKLSCLYLLHNFARKETLPIPFGGDNAE
YSDLALFVDSGSRAHEQANVIDIVPGDLITYAKQRMNNSIIKAGQTOFFFISLHALV
FRITGLTSKRRPQMSVSFEIEKIRSTLEAIISQKQEBDSVDVDVCKLVECLEGACAS
ATFTLGLTSKRRPQMSVSFEIEKIRSTLEAIISQKGEBDSVDVDVCKLVECLEGACAS
LTLADAEYLLGRYSILASCVLESLEKLAAAGVEWNTEVARDFLDSLASEHLAAGETFI
SIEEPVLIPASGGLSIGSHGTSTVRRKKRLGTALQTLDV"
                             /protein_id="AAKJ8210.1"
/db_xref="G1:13676644"
/db_xref="G1:13676644"
/translation="MTGMLAAVYSQIYAVSFELGLCRHLDQSSLDTGAVTRNIARLRK
LRTILGKQLDKQNEVMCTALSLEISHLLENSLLEAENLEKRNDLQETPILPSASFTAK
EYGQYSQDVSMYLINDIEIFIKRLNSVFYCLSYNMGLEALNKAEKLLGKFRGVSPVPD
PRLYLIDVPCWLCLHEQAVLPNQGKPKISGSGRISCNHIAVPVIPEPVIGLFENEVRQ
ASLTHLLKKQDNTRR.HHSREKUNTTEAYQSLDEYCVFSSVPPEISELSELLYMNSSR
NSISLTGGEEETWSRLSKLISRDEEMLEVMRKCELALAGASYNHTFVSRMPGILERLF
CGGIFSSVGNMSEALKLDCASAFTSQPQYRIIADQRNELYTRLNHAMSRLRRTENEQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MaperrlsGppwltvllllsTlsvaallilelifsagatistea
silvlllettilsvagaigildearliligcellaadylavilliptisedeiilia
ilvivilvgtittlvgaiggirarrselficifelelsteltilalligsfwlllvai
lewvww.vililillvvpiphhelptslæfrwkgrvsSpptgsbrspgshyslogsp
eedpkddtkgplcnmtqggppvngqllgohaqcpphypcchiqhpdgedsbgdddksw
       ENTEPHAPYVNQIQGNKDSSVIWSDAAKRREQYLRQLAAEGLTKLQACLARQGELMSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/product="ORF1"
/product="ORF1"
/product="ORF1"
/protein_id="AAK38208.1"
/db_xref="GI:13676642"
/db_xref="GI:13676642"
/translation="MTDDVrQDAPNLGAEDEMDRGVLLLTRVMIAAYLDDPGKGLGT
/cranslation="MTDDVrQDAPNLGAEDEMDRGVLLLTRVMIAAYLDDPGKGLGT
/ERLFLFLLIKKKKEEKFADIVNSGSAPTTLHGHIKRLMTFTRAIYEDHMDNWFRV
RALTSLAVAYARRNIPGDSENAGLLLVGFAEFLCLYRRAWLSRLGGIRVGLRRAFPLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="C1"
join(484. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATVDPROLPLFILSSYLVILAIMMEFOTSSSLFAALFVIIAGMLCVTVGVIFLLAG
VKPLLSGMICASGITMLVLGVVLLVVCTRASTRESIYEDLRYPTRDANGEYENVGYPP
RDGDAPHRLGEPVYDDVEQAT"
                                                                                                                                                                                                                                                                                                                                                                  'product="ORF3"
                                                                                                                                                                                                                                                                                                                                                                                                                                note="similar to"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/product="ORF2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4564. .7947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WMRMRVGESCYKQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SWRNPEEEDNRKQDRLGTKPF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GDAGEEDNGPNDPNTNNGNEGGEGDDYKSWRKPEEEDNGPNDPNTNNRIEDGDGDDGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="C1"
/protein_id="AAK38207.1"
/db_xref="G1:13676641"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transforming gene"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="C1"
                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="similar to EBV BALF1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3943. .4464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       join(484. .721,811. .897,1087.
/gene="C1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="positional and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          product = "C1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                     EBV BALF3; transport protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EBV BALF2; major DNA binding protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .897,1087. .1829)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                functional similarity to EBV LMP1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     similar to bcl-2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1829)
Best Local Similarity:
Query Match:
DB:
                                                                                                                                          Score:
                                                                                                  Percent Similarity:
                                                                                                                                                                           Pred. No.:
                                                                                                                                                                                                         Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sg
                                                                                                                                                                                                            Scores:
```

CDS

CDS

Sg

Length: Matches:

Gaps: Indels: Conservative: Mismatches:

```
/GOGO, BLATE-1
/ Droduct= "ORES"
/ product= DROCUMENTAL PRODUCT
/ product= DROCUME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="MDETTQIMGSPTVELPEGPGCNSSYNTGLSIFTGVTMVTEILIL
IILLEFLLIRKLKOSIDWKLAVMFMDTLKKLIGEFSNTGLCMLTQHWKLMSLL
LSGERHHSGMAAHRALMVSAKTIKPVSNRCIIMYLLLTLITVFILVLASVFEAGISINL
NRGPNLCREGATQAGHAIRQAAKGFFFFLCCCVATIIATCYITYXIWHTRLSTRKRISIC
NVMFTGIIGATCWLLLAAPLVFRPEPGNLGFFCPSSLMTRYVHAFGSLLILLLLLLYI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RDEKAITVALRPASGISTGVRRYNSOPDLYDDPGWMVWTYRRRTTVACMITDMQAKSN
SPENFYTTLGQTVEMSPFYNGSNSETFNEPAGTPE REKYK UT FEBRRGTIPKEEKR
AFLINGTYTLSWKLDARSSYCPLTMWKDYSVAIRTDDGSSFHFITPGCTASFYTNTTH
EKLPDQFKCIEQQVNKTITEQFAKLSNKYDRDEAEIOYFRTAGGLLLAWLPVTPKSLI
TIRDIALNNTEAQDGKAARDOPDTANSTPQAPPLRRNREAGADRNTTNITDVSAT
TEGTGDKDSILGTIONPATAQIQFAYDSLRSQINRMLGDLASAWCQBEDROWYLDEI
TEGTGDKDSILGTIONPATAQIGFAYDSLRSQINRMLGDLASAWCQBEDROWYLDEI
TKINETTWTGVYGYPVAARRIGDVISVRCYPVEQESVSLRKSMRVLGSETSCYTRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18132. .19526
/note="similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WAHRQFIDDLKNILESTLVSFRRASNPNS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MPHLI VYQKI LARNEEPPQI HDRI PYVFVASAEGGRSGRGTRKSEMAEDPSYVTRHNI
PIAVEHYFEKLLQGTAN I LQCLFGNNPETALSVLQNFTAGYPHQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAK38211.1"
/db_xref="G1:13676645"
/db_xref="G1:13676645"
/translation="MAVEKIMIFIEMSYAIGAPRESEPPVSQPNPKPETTVFPGSTHQ
/translation="MAVEKIMIFIEMSYAIGAPRESEPPVSQPNPKPETTVFPGSTHQ
PYEFPFRVCEMNHGG1FRFATRISCNFNLQENHTEG1LIVFKDNIIPYTFNVBAYT
KVYTTVTVYNGWYADAVTNAHEERYSVPDYELENMDTLYQCYNSVRMVKAGVERVYVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ISKOOLDAIMLALYEOTAKRTQAESKTSDSTTSLPSRALEAARNRLRLRKKPGRENRS
DLKPLLTNIEDTEF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LVSFSFPNDSKTYEGOLGOENEILLTKKMVENCODTCOHYFOSGNEMHVFRDYOHFKT
I PVEDVATLOTF I TLNTSF I TNI D FOTLELY SRDERRASNVFD LEGI FREYNFOTONI
ANLARDLIMA I SINNRNOFVDGLGELTDSLGAVGOA I TNI VSSVGGLFSSLI SGF I SFF
KNIPGGULI LAGI VAVI FLVI FLVRQNRTI AQOPVOFLY PEI OSLTKNRE I GOSNVAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TLALRYWGDTVYEEMAAMYNHFIARRAFVHRAWEDKRDGTAEIFENSKYIKTHLFNOT
LSSEHVNALTMTVYSLLTGPLLGDAGMFPPPENSKYSCEAAGILPHOKLFMASLVM
PGIQPAEWIETSFNSFYQPPDGTLAETQOILARYIREATLTVSLYNKTWGOSVHLRRV
DEAGLEGAVPPDGIYITYESENPLILILKTKGWIFKDLYALLYMHLOMVQDGRV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /protein_id="AAK38213.1"
/db_xref="GI:13676647"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/product="ORF6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="similar to EBV BILF1; glycoprotein gp64"
                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17204. .18121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="similar to EBV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12590.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9973. .12585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=:
1.25
184.00
46.81%
35.46%
17.99%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .15640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Raji LF1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EBV BALF4; glycoprotein B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BALFS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA polymerase"
```

```
RESULT 9
DDISGSPB
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                     JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x AF319782 (1-149696)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                             CDS
                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  70
                                                                                                                                                                               Blume, J.E. and Ennis, H.L.

A Dictyostellum discoideum cellulase is a member germination-specific gene family
J. Biol. Chem. 266 (23), 15432-15437 (1991)
91332071
                                                                                                                                                                                                                                                                                                                         Giorda,R., Ohmachi,T., Shaw,D.R. and Ennis,H.L. A shared internal threonine-glutamic acid-threo defines a family of Dictyostelium discoideum sp
                                                                                                                                                                                                                                                                                                                                                                                              endo-1,4-beta-D-glucanase; spore Dictyostelium discoideum Dictyostelium discoideum
                                                                                                                          Draft entry and computer-readable In press] kindly submitted by H.L.Ennis, 17-APR-1990.
                                                                                                                                                                                                                                                                                                                                                                                                                                         M33861.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dictyostelium
                                                                                                                                                                     1869562
                                                                                                                                                                                                                                                                                                Biochemistry 29
                                                                                                                                                                                                                                                                                                              specific proteins
                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                        M33861 J02916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DDISGSPB
                                                                                                                                                                                                                                                                      1976383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTCGACCCCAACCTCGACCCCAACCTCGACCCCAACCTCGACCCCAACCTCGACCCCA 2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTAGTGACAGTGAAATGAAATAGCAAGCGATTTTGTAGCATGAACTTAGATTGCCATCT 2839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CysSerLysProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysProLeu 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTCGACCCCAACCTCGACCCCAACCTCGACCCCAACCTCGACCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGGTGTTATATTAGTA-----GTGATAATTTGTGTTCTCTACCGCGCCCCGACCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AspAlaArgIleSerValSerAsnIleValValAspGlnCysSerLysAlaGlyValPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTTGGCGCCATCTATTGGGAAAT---CGTGCTACATCATTGAGTGATCGAGTTTTGCCC 2899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTCGACCCCAACCTCGACCCCAACCTCGACCCCAACC---TCGACCCCAACCTCGACC 2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrProAlaGluPhe 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTCGACCCCAACCTCGACCCCAACCTCGACCTCGACCTCGACCTCGACCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValPro 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluPro 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluPro 109
                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 3655)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ere cas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 170
                                                      /organism="Dictyostelium
/mol_type="genomic DNA"
/strain="AX-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:167882
/note="spore germination-specific protein"
/codon_start=1
                                         /db_xref="taxon:44689"
                                                                                                           ocation/Qualifiers
                             oin(1346. .1412,1505.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 discoideum spore
                                                                                                                                                                                                                                                                                                (31),
                                                                                                                                                                                                                                                                                                 7264-7269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3655 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 p DNA linear
germination-specific
                                                                                                                                                                                                                                                                                                 (1990)
                                                                                                                                                                                                                                                                                                                                                                                                                            germination-specific
                                                                                                                                                        sequence for
                                                                                    discoideum'
                                                                                                                                                                                                                                                                                                                          acid-threonine-proline repeat scoideum spore germination
                                                                                                                                                        [Biochemistry (1990)
                                                                                                                                                                                                                             of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 02-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89
             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                    TNAF000605
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE CO
                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                         Ó
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                  ફ
                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores: Pred. No.:
                                                                                                              SOURCE
                                                                                                                                                                                                              RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                             KEYWORDS
                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    intron
                                                                                                                                                                                                                                            3103
                                                                                                                                                                                                                                                                                                 3046
                                                                                                                                                                                                                                                                                                                                                                                                                2926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2806
                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                            114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 104
                                                                                                                                                                                                                                                                      174
                                                                                                                                                                                                                                                                                                                             154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /number=2
1 482 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1413. .1504
1505. .>3555
```

```
## BASE COUNT 1346 a 482 c 459 g 1368 t

ORIGIN

Alignment Scores:

Pred. No.:

182.50

Percent Similarity:

45.45%

Best Local Similarity:

40.00%

Ouery Match:

17.84%

DB:

DB:

US-10-081-935-4 (1-194) x DDISGSPB (1-3655)
```

SerPheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGly 173 ThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGly 153 **ACTGAGACTCCAACTGAGACTCCAACTGAGACTCCAACAGAGACTCCAACAGAAACTCCA** SerGlu-----ThralaGluProThralaGluPro 113 ACAGAGACTCCAACAGAAAACTCCAACAGAGACTCCAACAGAAACTCCAACAGAAACTCCA ThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluPro 133 TCTTCAACTTCTGTTCCAACCACAACTCCAACAGTAACTGAAACCCCCAACAGAGACTCCA GAATCTTTATCAATCTATAAAAGTGGATTA 3132 SerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAlaProGluPro 103 SerAsnValArgAlaSerValGlyGlyIle 183 ACTGAAACTGTTACTCCAACCCCCAACAGTA---ACACCAACTGAAACTCCATCAAGTGGA ACAGAAACTCCAACAGAAACTCCAACAGAAACTCCAACAGAAACTCCAACCGAGACTCCA 3045 2985 2925 2865

7100
000005
TNAF000605
TNAF000605
TNAF000605
TVAFO00605
TOTICHOPPLUSIA ni insect intestinal mucin IIM14 mRNA, complete cds.

SSION AF000605
TrichopPlusia ni (cabbage looper)
TrichopPlusia ni Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia;
Noctuoidea; Noctuidae; Plusiinae; TrichopPlusia.

ENCE 1 (bases 1 to 2455)
HORS Wang, P. and Granados, R.R.
Molecular cloning and sequencing of a novel invertebrate intestinal mucin cDNA

```
В
                                                                                                                                                       ş
                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                              S
                                                                                                                 밁
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-4 (1-194) x TNAF000605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                      1583
                                                                                                                                                                                                                                                                                                                                                                          1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1418
                                                                           124
                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                     19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Biol.
97341213
9195982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (21-APR-1997) Boyce University, Ithaca, NY 14853,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wang, P. and Granados, R.R. Direct Submission
                          CCAACCACTGTCACAGTACCACCTÁCTGCTGCTCCCACCGCAGCCCCTACTACTGCTGTC
                                                                                                                                                                                                                                         ProGluProSerGluThrAlaGluProThrAlaGluProThrGlu--
                                                                                                                                                                                                                                                                                 CCACCTGCAACGCCACCGCAACTGCAGCCCCAGTCCCACCT----ACAACCGCAATT
                                                                                                                                                                                                                                                                                                                     AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                    ACGGCTGCCCCAACGGCTGCCCCAACGGCTGCCCCAACTGCCGCACCCTCCACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTTTCGAGTGCGATTCTGACAACCAGTGCACATCGACTGCTGCCCCGACAGCTGCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AspPheLysCys------HisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr 44
                                                                                                                                                                                               CCTACTCCGGCCCCACCGCTGCCCCCACCGCAGCTCCTACTACTGCTGCCCCCTGAATCC 1696
                                                                                                                                                                                                                                                                                                                                                                                                            ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTGCCACACAGTCCTGT-----GAGTCTCCTGTGACCGCTGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    t tans lation="miktlefitalglvaarpevsdaeknpalhephpdcppaeohwl
LPHEVDCTKFYYCEYGLKFI APRDCAPGTEFKESAGTCVHAALAGGTLEGEPAETTQA
PATTOAPTTTOAPTTTOAPTTTOAPTTTOAPTTTOAPTTTOAATTTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATTPAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="insect intestinal
/protein_id="AAC47556.1"
/db_xref="GI:2224919"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Trichoplusia
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.0939
175.00
37.36%
30.77%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               272
                                                                                                                                       (26), 16663-16669 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   479 g
                                                                  -----GluProThrAlaGluProThrHisGluProThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1-2455)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thompson Institute, Cornell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mucin IIM14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2455
56
12
72
42
                                                                                                             1756
                                                                                                                                                                                                                                                                                                                                                                    1582
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1522
                                                                                                                                                       123
                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                 S
                                                                                    밁
                                                                                                                        ঠ
                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
AR129835
LOCUS
DEFINITION
                                                                                                                                                                    밁
                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       등
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                              1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1922
                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45
GCTGCCCCACCGCAGCCCCTACTACTGCTGTCCCAGAATCCCAACT--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 592
```

```
US-10-081-935-4 (1-194) x AR129835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135 GluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySer 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AR129835
Sequence 1 :
AR129835
AR129835.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Granados, R.R. and Wang, P.
Invertebrate intestinal mucin cDNA and
Patent: US 6187558-A 1 13-FEB-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unclassified
GluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySer
                                                                                                               CCAACCACTGTCACAGTACCACCTACTGCTGCTCCCACCGCAGCCCCTACTACTGCTGTC 1756
                                                                                                                                                                                                                            ProGluproSerGluThrAlaGluProThrAlaGluProThrGlu--
                                                                                                                                                                                                                                                                                         AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla 100
                                                                                                                                                                                                                                                                                                                                             ACGGCTGCCCCAACGGCTGCCCCAACGGCTGCCCCAACTGCCGCACCCTCCACCGTGGTC 1582
                                                                                                                                                                                                                                                                                                                                                                                ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                                                                                                                                                                                                                                        GTTTTCGAGTGCGATTCTGACAACCAGTGCACATCGACTGCTGCCCCGACAGCTGCTCCA 1522
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AspPheLysCys-----HisCysSerLysProGluLeuProGlyGlnIleThr 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTGCCACACAGTCCTGT-----GAGTCTCCTGTGACCGCTGGTTGC-----CAA 1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGTC 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AsnVal 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---ACTGTCACATCACCACCTACTGCTGCCCCCACTACCGCAGCACCTGCCCCCAACACC 1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGCCCCACCGCAGCCCCTACTACTGCTGCCCAGAAATCCCCAACT------
                                                                                                                                                                                          CCTACTCCGGCCCCACCGCTGCCCCCACCGCAGCTCCTACTACTGCTGCCCCCTGAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySer 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="unknown"
961 c 479 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.0939
175.00
37.36%
30.77%
17.11%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 2455
                                                                                                                                          2455)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2455 bp
patent US 6187558.
                                                                     ------GluProThrAlaGluProThrHisGluProThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (1-2455)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      related products and methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2455
56
12
72
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                   ACAACCGCAATT 1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-MAY-200
                                                                                                                                                                                          1696
   154
                                         1816
                                                                                                                                                                                                                              115
                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1864
```

1864

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
TNAF000606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
           Ś
                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                          Alignment Scores: Pred. No.:
                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                        US-10-081-935-4 (1-194)
                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mucin cDNA
J. Biol. Chem.
97341213
             25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Trichoplusia ni insect intestinal mucin IIM22 mRNA, AF000606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Noctuoidea; Noctuoidea; Plusiinae; Trichoplusia.

1 (bases 1 to 2821)

Wang P. and Granados R.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (21-APR-1997) Boyce Thompson Institute, Cornell University, Ithaca, NY 14853, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 2821)
Wang, P. and Granados, R.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Trichoplusia ni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AF000606.1 GI:2224920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9195982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Molecular cloning and sequencing of a novel invertebrate intestinal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Trichoplusia ni (cabbage looper)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --- ACTGTCACATCACCACCTACTGCTGCCCCCACTACCGCAGCACCTGCCCCCAACACC 1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AsnVal 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySer 174
ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGTC 1927
                                                                                                                                                                                               710
                                                                                                                                                                                               þ
                                                                                                                                                                                                                                                                    APNITYTVPPTAAPTTAAPAPNTTVTAPPTAAPTAAPAPNTTVTVPPTAAPTAAPTA
VAPAPNTTAAPVTTTSAPATTPEDDDIDPPLPNDPINPCVEECNVLPWAHADCDKYWV
CDGNNQVLVVCSEGLQFNPTTKTCDFACNVGCVRSNIQWSESYEGVQVFIPWNKLDED
                                                                                                                                                                                                                                                                                                                                                                    IRQALNFEL"
                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="insect intestinal mucin IIM22"
/protein_id="AAC47557.1"
/db_xref="GI:2224921"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organism="Trichoplusia"
                                                                                                                                                                                                                                                                                                                                                                                                               translation="MIKTLLFLTALGLVAARPEVSDAEKNPALHEPHPDCPPAEQHWL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:7111"
                                                                                 0.107
175.00
37.36%
30.77%
17.11%
                                        ×
                                                                                                                                                                                                 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _type="mRNA"
                                         TNAF000606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      272 (26),
                                                                                                                                                                                                 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16663-16669 (1997)
                                         (1-2821)
                                                                                                                                                                                               ıΩ
                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               라.
                                                                    2821
56
12
72
42
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-JUN-1997
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                    AR129836
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
S
                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                               US-10-081-935-4 (1-194) x AR129836
                                                                                                                     Query Match:
                                                                                                                                                                           Alignment
Pred. No.:
                                                                                                                                     Best Local
                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1511
                            1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1406 CCTGCCACACAGTCCTGT-----GAGTCTCCTGTGACCGCTGGTTGC------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1910 ACAGTC 1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45
                                                                                                                                   Similarity:
                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2 f
AR129836
AR129836.1
 $5
                                                    25
                                                                                                                                                                                                                                                                    1 (bases 1 to 2821)
Granados,R.R. and Wang,P.
Invertebrate intestinal mucin cDNA and related products and methods
Patent: US 6187558-A 2 13-FEB-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                       Unknown
                                                                                                                                                                                                                                                                                                                                                                    Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                     AR129836
                                                                                                                                                                                                                                                                                                                                         Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTTTCGAGTGCGATTCTGACAACCAGTGCACATCGACTGCTGCCCCGACAGCTGCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AspPheLysCya------HisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGGCTGCCCAACGGCTGCCCAACGGCTGCCCCAACTGCCGCACCCTCCACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---ACTGTCACATCACCACCTACTGCTGCCCCCACTACCGCAGCACCTGCCCCCAACACC 1909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySer 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACCTGCAACGCCACCCGCAACTGCAGCCCCAGTCCCACCT----ACAACCGCAATT
                            CCTGCCACACAGTCCTGT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AsnVal 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySer 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGCCCCCACCGCAGCCCCTACTACTGCTGTCCCAGAAATCCCAACT--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTGAAATCCCAATCACTGTCACATCAGCGCCTACCGCTGCCCCCACCGCTGCCCCACC 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAACCACTGTCACAGTACCACCTACTGCTGCTCCCACCGCAGCCCCTACTACTGCTGTC 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----GluProThrAlaGluProThrAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTACTCCGGCCCCCACCGCACCGCAGCTCCTACTACTACTGCCCCCTGAATCC 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProGluProSerGluThrAlaGluProThrAlaGluProThrGlu------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProCysValGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
 AspPheLysCys----
                                             ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr
                                                                                                                                                                                                                                 710
                                                                                                                                                                                                                                 Ø
                                                                                                                                                                                                                               organism="unknown"
1030 c 529 g
                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                    0.107
175.00
37.36%
30.77%
                                                                                                                                                                                                                                                           . 2821
                                                                                                                                                                                                                                                                                                                                                                                               GI:14117733
                                                                                                                                                                                                                                                                                                                                                                                                                      patent US
                                                                                (1-2821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----GluproThrAlaGluproThrHisGluproThr 134
                                                                                                                                                                                                                                                                                                                                                                                                                         2821 bp
JS 6187558
--HisCysSerLysProGluLeuProGlyGlnIleThr 60
                            -GAGTCTCCTGTGACCGCTGGTTGC--
                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                          Gaps:
                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                          2821
56
12
72
42
                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                       PAT
                            ----CAA 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                       16-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
CTH420770
                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rocus
                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
                                                                                  gene
                                                          SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1451
                                                                                                                                                                                                                                                                                                                                                                   CTH420770
Clostridium thermocellum partial cl partial ORFZ, strain F7.
AJ420770
AJ420770.1 GI:17129556
chiA gene; chitinase; ORFZ.
Clostridium thermocellum
Clostridium thermocellum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                 Direct Submission
Submitted (20-NOV-2001) Zverlov V
Technical University of Muenchen,
                                                                                                                                                                                                                                                                           Zverlov,V.V., Fuchs,K.P. and Schwarz,W.H. Chi18A, the endochitinase in the cellulosome of th cellulolytic bacterium Clostridium thermocellum Appl. Environ. Microbiol. 68 (6), 3176-3179 (2002)
                                                                                                                                                                                                                            Zverlov, V.V.
                                                                                                                                                                                                                                                                                                                                                Clostridium.
                                                                                                                                                                                                                                                                                                                                                           Bacteria; Firmicutes; Clostridia; Clostridiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Asnval 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTGAAATCCCAATCACTGTCACATCAGCGCCTACCGCTGCCCCACCGCTGCCCCACC 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----GluProThrAlaGluProThrAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTACTCCGGCCCCACCGCTGCCCCCACCGCAGCTCCTACTACTGCTGCCCCCTGAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACCTGCAACGCCACCCGCAACTGCAGCCCCAGTCCCACCT----ACAACCGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGCCCCCACCGCAGCCCCTACTACTGCTGTCCCAGAAATCCCCAACT-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAACCACTGTCACAGTACCACCTACTGCTGCTCCCACCGCAGCCCCTACTACTGCTGTC 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProGluProSerGluThrAlaGluProThrAlaGluProThrGlu------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGGCTGCCCAACGGCTGCCCAACGGCTGCCCAACTGCCGCACCCTCCACCGTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                                                         (bases 1 to 1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTGTCACATCACCACCTACTGCTGCCCCCACTACCGCAGCACCTGCCCCCAACACC 1909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1915
 /EC_number="3.2.1.14"
/function="hydrolysis of beta-1,4 linkages of chitin"
/codon_start=2
                               /gene="chiA"
/EC_number="
                                                                    /gene="chiA"
                                                                                        /db_xref="taxon:1515"
                                                                                                          /mol_type="genomic
/strain="F7"
                                                                                                                                   organism="Clostridium thermocellum"
                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                 Zverlov V.V., Institute for Microbiology, Muenchen, Am Hochanger 4, Freising 85350,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----GluProThrAlaGluProThrHisGluProThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                  chiA gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear BCT (
                                                                                                                                                                                                                                                                                                       of the
                                                                                                                                                                                                                                                                                                                                                         Clostridiaceae;
                                                                                                                                                                                                                                                                                                       thermophilic
                                                                                                                                                                                                                                                                                                                                                                                                                                                               BCT 07-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115
 REFERENCE
AUTHORS
                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                    RESULT 15
CTCHIAGEN
                                                                                                                                                                                              DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                         Snoo
                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sg
                                                                                                                                                                                                                                                                           791
                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scores:
                                      Appl. Env
22035004
                                                                                                                                                                                              CTCHIAGEN
C.thermoce
Z68924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
Fuchs, K.P
                                                                                                                     Clostridium.
                           .2039789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
```

```
US-10-081-935-4 (1-194) x CTH420770
                                                                                                                                                                                                                                                                                                                                                                                                                                             160 ArgProThrAlaSerThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140 ValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 671 GAACCAACTGCTACACCGACATCCACACCAACATTTACGCCGACGTCAAAAACCAACGCCC 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551 GATGCAACTGCATCGGCAGGACTTGTACCTGACAATACATTTTTGACGGAGCACACAAAT
                                                                                                                                   Z68924.2 GI:17977822
ChiA gene; chitinase; putative substrate binding Clostridium thermocellum Clostridium thermocellum Bacteria; Firmicutes; Clostridia; Clostridiales;
Zverlov,V.V., Fuchs,K.P. and Schwarz,W.H. Chil8A, the endochtinase in the cellulosome of the cellulolytic bacterium Clostridium thermocellum Appl. Environ. Microbiol. 68 (6), 3176-3179 (2002)
                                                                                                                                                                                                                                                                                 thermocellum chiA gene
                                                                                                                                                                                                                                                                                                                                                                                                    AAACCTGCACAAAAGACACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGCCGACTGCCACACCGACGCGAAAAACCGACGCCGACACCTACGCACACACCCAACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAla 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGCCGACTCCAACAGATGACATTACGCCTACACCTACTCTACTCTTGAACCAACGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAla 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AspGlnCysSerLysAlaGly---ValProIleAspIleProProValAspThrThrAla 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="putative substrate binding protein"
/protein id="CAD12660.1"
/protein id="CAD12660.1"
/db_xref="GAD12660.1"
/db_xxef="SPTREMBL:Q8VVI7"
/db_xxef="SPTREMBL:Q8VVI7"
/translation="MKWYYKSKVKRQVIKTLITLPVVLVLTSLVVYTFLTNNRSGSRD
ADGTFPDSVKSPSIAINTPSPGTDATASAGLVPDNTFLTEHTNAPTPTDDITPTPTT
LEPTPEPTATPTSTSFPFTFTSKFPKPTATPTRKFPTPTHTPTPKKAGPI
TTVQYKNGDSTSSVTAIYPIFKITNNGDTSVKLSDIIIRYYYTKEGNENETFWCNEFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="ORFZ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="SPTREMBL:Q8VVI8"
/translation="SDFPIPEGRKLADLNRDGNVNSTDYSILKRYILKAIDNIPVDD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="CAD12659.1"
/db_xref="GI:17129557"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=experimental
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.0579
172.50
55.17%
44.83%
16.86%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                    3067
                                                                                                                                                                                                                                                                                                                                                                                                                                               166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          269
                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1011
39
9
38
1
                                                                                                                                           Clostridiaceae;
                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                       BCT
                                                                                                                                                                                                                                                                                                       07-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             790
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -10_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -35_signal
terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (27-JAN-1996) Fuchs K.P., Institute for Microbiology,
Technical University of Muenchen, Arcisstr. 16, Muenchen, Bavaria,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Germany, D-80290 revised by [3] 3 (bases 1 to 3067)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Germany, D-80290
On Dec 23, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (13-DEC-2001) Fuchs K.P., Institute for Microbiology,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Technical University of Muenchen, Arcisstr. 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fuchs, K.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/trans1_table=11
/trans1_table=11
/produci="Chitlinase"
/protein_id="CAA93150.1"
/protein_id="CAA93150.1"
/protein_id="CAA93150.1"
/db_xref="GI:1418680"
/db_xref="GI:4818680"
/db_xref="GI:4818680"
/db_xref="SpTERMBL:QS9326"
/trans1ation="MKKIPLLMLLSAIIFLSLHPTLSYAQDDSLPTKRIVGYFAEWNI
/trans1ation="MKKIPLMLLSAIIFLSLHPTLSYAQDDSLPTKRIVGFEHFG
/LIXYKEQYPHVKTLISVGGWTESKYFSDVALTESERNTFADSCUEFIRTYRFDGVDI
DWEYPVSGGWMENIRRFEDKQNETLLLKCLREKLDAAGAEDGKHYLLTIAAPAGSFNI
KWTEDEIYHQYLDFINIMTYDYSGSWENVANHLAPLYMWNDDSYPERKEKFNUDWTV
KEYLRIGVPAEKINVGVPYYAAGWQEVNGGINGLEGTSKKPLSGTOFHYINSLLKSPD
LGFTRYWDEYAMVPYLMNDESATVYSYEDEISLKNKCDYVIENULGGIMTWELLSGITA
EGGTTLTSUYYONSTEFKDEIYGDLNGGGKVNSSDLAILKRYMLRAISDFPIPEGRKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submission
                                                                                                /codon_start=1
/trans1_table=11
/product="putative substrate binding protein"
/protein_id="CAA93151.2"
/protein_id="CAA93151.2"
/db_xref="G:17977823"
/db_xref="G:17977833"
/db_xref="G:1797833"
/d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           185.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADLNRDGNVNSTDYSILKRYILKAIDNIPVDD'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="ChiA"
/EC number="3.2.1.14"
/function="hydrolysis of beta-1,4 linkages of chitin"
/note="estimated molecular mass 55 kDa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , 2001 this sequence version replaced gi:1418679
Location/Qualifiers
                              RDGSOVYGTFVKMSKPKKNADHYLEIGFYDKAGSLKPGESVELKVVSKNGWTNTTSLM
TYSYNRVNNRFINWIILTVYLSGKLVYGKEP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1795.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="ChiA"
185. .1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="genomic DNA"
/strain="DSM 1237"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:1515"
/clone="pKL133"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="ORFZ"
/note="similarity to typeIIİ-cellulose-binding proteins"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'gene="ORF2"
1849. .2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="palindrome"
1849. .2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="ChiA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Clostridium thermocellum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="2x29 AA repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "ChiA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lib="lambda 1059"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     putative promoter region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               promoter region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Muenchen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bavaria,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC115017/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x CTCHIAGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No.:
Birren, B., Linton, L., Musbaum, C., Lander, E., Ali, A., Allen, N., Anderson, S., Barna, N., Bastien, V., Bloom, T., Boguslavkiy, L., Boukhgalter, B., Brown, A., Camarata, J., Campoplano, A., Chang, J., Chazaro, B., Choepel, Y., Colangelo, M., Collins S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Cook, A., Cooke, P., Perrellano, K., Dewar, K., Diaz, J.S., Dodge, S., Farro, S., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Gord, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Kamat, A., Karatas, A., Kalls, C., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Lindblad-Toh, K., Liu, G., MacLean, C., Macdonald, P., Major, J., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., Marquis, N., Matthews, C., Nicol, R., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nguyen, C., Nicol, R., Norbu, C., Naman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Rymond, C., Retta, R., Rieback, R., Riley, R., Riee, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schupback, R., Seaman, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Topham, K., Travers, M., Trajalio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W.J., Young, G., Zainoun, J., Zembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2290 AAACCTGCACAAAAGACACCT 2310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 AlaproGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAla 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       160 ArgProThrAlaSerThrPro 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC115017.3 GI:30017911
HTG; HTGS PHASE2; HTGS_DRAFT.
Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus clone RP24-220All,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus, clone RP24-220All
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Birren, B., Nusbaum, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC115017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AspGlnCysSerLysAlaGly---ValProlleAspIleProProValAspThrThrAla 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGCCGACTGCCACACCGACGCGAAAAACCGACGCCGACACCTACGCACACACCAACACCC 2289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGly 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACCAACTGCTACACCGACATCCACACCAACATTTACGCCGACGTCAAAAACCAACGCCC 2229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAla 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGCCGACTCCAACAGATGACATTACGCCTACACCTACACCTACTCTTGAACCAACGCCT 2169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGCAACTGCATCGGCAGGACTTGTACCTGACAATACATTTTTGACGGAGCACACGAAT 2109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 207870)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 207870)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="palindrome"
559 c 658 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Metazoa; Chordata;
Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0.161
172.50
55.17%
44.83%
16.86%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              658 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Lander, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       207870 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (1-3067)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear HTG 23-APR-2003
DRAFT SEQUENCE, 12 ordered
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lindblad-Toh, K., Liu, G., Lui, A., Mabbitt, R., MacLean, C., Maddrad-Toh, K., Liu, G., Lui, A., Matthews, C., McCarthy, M., Maddonald, P., Major, J., Manning, J., Matthews, C., McCarthy, M., Maddonald, P., Major, J., Mienga, V., Murphy, T., Naylor, J., Meneus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Neylor, C., Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Rachupka, A., Ramasamy, U., Raymond, C., Retta, R., Rise, C., Rogov, P., Rachupka, A., Ramasamy, U., Raymond, C., Retta, R., Rise, C., Rogov, P., Rachupka, A., Schauer, S., Schupback, R., Seaman, S., Severy, P., Smith, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Stubbs, M., Talamas, J., Tesfaye, S., Theodore, J., Topham, K., Travers, M., Vassiliev, H., Venkateraman, V.S., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Young, G., Zainoun, J., Zembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Birren, B., Nusbaum, C., Lander, E., Abouelleil, A., Allen, N., Anderson, S., Arachchi, H.M., Barna, N., Bastien, V., Bloom, T., Boguslavkiy, L., Boukhgalter, B., Camarata, J., Chang, J., Choepel, Y., Collymore, A., Cook, A., Cooke, P., Corum, B., DeArellano, K., Diaz, J.S., Dodge, S., Dooley, K., Dorris, L., Erickson, J., Faro, S., Ferreira, P., FitzGerald, M., Gage, D., Galagan, J., Gardyna, S., Graham, L., Grand-Pierre, N., Hafez, N., Hagopian, D., Hagos, B., Hall, J., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Kamat, A., Karatas, A., Kells, C., Landers, T., Levine, R., Lindblad-Toh, K., Liu, G., Lui, A., Mabbitt, R., MacLean, C., Macdonald, P., Major, J., Manning, J., Matthews, C., McCarthy, M., Maddirim, J.. Meneus, L., Mihova, T., Mlenoa, V., Murphy, T., Naylor, J., Maloring, J., Murphy, T., Naylor, J., Maloring, J., Marthy, M., Naylor, J., Manning, J., Marthy, M., Naylor, J., Manning, J., Marthy, T., Naylor, J., Marthy, T., Marthy, T., Naylor, J., Marthy, T., Marth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (23-APR-2003) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On APR 17, 2003 this sequence version replaced gi:21328561. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (14-MAR-2002) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                by the finished sequence as soon as it is available and the accession number will be preserved.

1 799: contig of 799 bp in length
800 899: gap of 100 bp
900 1664: contig of 765 bp in length
1665 1764: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         provided by the submittor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 207870)
                                                                             15602
15702
24576
24676
24676
33548
33648
43718
43718
58208
58208
58208
58308
84733
84733
115403
115403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: sequence_submissions@genome.wi.mit.edu
------ project Information
Center project name: L24637
Center clone name: 220_A_11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center: Whitehead Institute/ MIT Center for Genome Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   800
900
1665
1765
8746
8846
                  58207: contig of 14490 bp ir

58307: gap of 100 bp

84732: contig of 26425 bp ir

84832: gap of 100 bp

115302: contig of 30470 bp ir

115402: gap of 100 bp

169837: contig of 54435 bp ir

169937: gap of 100 bp

207870: contig of 37933 bp ir
                                                                                                                                                                                                                                                                                                                                                                                                               24675: gap of 100 bp
33547: contig of 8872 bp in length
33647: gap of 100 bp
43617: contig of 9970 bp in length
43717: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8745: contig of 6901 bp in length

8845: gap of 100 bp

15601: contig of 6756 bp in length

15701: gap of 100 bp

24575: contig of 8874 bp in length
                      in length
                                                                                                            in length
                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                    in length
                                                                                                                                                                                                                                                                                                                                                                          in length
                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Choepel, Y.,
```

```
SEGMENT
SOURCE
                                                             ACCESSION
VERSION
                                                                                                                                                                                   밁
                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                         LOCUS
DEFINITION
                                                                                                                                    CASR69XYN2
                                                                                                                                                         RESULT 17
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ફ
                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-4 (1-194) x AC115017 (1-207870)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                   176113
                                                                                                                                                                                                                                                                                                        176233
                                                                                                                                                                                                                                                                                                                                                                    176287
                                                                                                                                                                                                                                               176173
                                                                                                                                                                                                                                                                                                                                                                                                                             176347 CCTACACCTACACCTACACCTACAGCTACAGCTACACCTACACCTACACCTATA 176288
                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                                                                                                                                                                      129
                                                                                                                                                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                168
                                                                                                                                                                                                                                                                                                                                                                                                                                                            89
2 of 3
Caldicellulosiruptor sp. Rt69B.1
                                                                                                    CASR69XYN2 :Caldicellulosiruptor sp.
                                                                           AF036924
                                                           AF036924.1 GI:2760905
                                                                                                                                                                                                                                                                                                     GCTACACCTACACCTACACCTACACCTACACCTACACCTACACCTACAGCTACACCTACA
                                                                                                                                                                                                                                                                                                                                                                                    ProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGlu 128
                                                                                                                                                                                   GCTACACCTACAGCT 176099
                                                                                                                                                                                                                                                                                                                                 ProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyVal 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProIleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGlu 108
                                                                                                                                                                                                              GluPheProGlyAla 172
                                                                                                                                                                                                                                           CCTACACCTACACCTACACCTACACCTACACCTACACCTACACCTACACCTACACCTACA 176114
                                                                                                                                                                                                                                                                    ProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSer---ThrProAla 167
                                                                                                                                                                                                                                                                                                                                                                 CCTACAGCTACACCTACA-----CCTACAGCTACACCTACACCTACACCTACAGCTACA 176234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment" 58308. .84732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment"
43718. .58207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84833. .115302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8846.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169938. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24676.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900. .1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
169938. .207870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33648. .43617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Mus musculus"
/mol_type="genomic DNA"
/db_xref="taxon:10090"
/clone="RP24-220A11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="assembly_fragment"
115403. .169837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1765. .8745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone_lib="RPCI-24 Male Mouse BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .207870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10.4
170.50
51.76%
48.24%
16.67%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .15601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 24575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .33547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        membly_fragment"
38797 g 64182
                                                                                                    5437 bp DNA linear
Rt69B.1 family 10 xylanase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1103 others
                                                                                                      (xynC) gene,
                                                                                                                      BCT 29-NOV-2001
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
  Query Match:
DB:
                                        Percent Similarity:
Best Local Similarity:
                                                                                Score:
                                                                                                   Pred. No.:
                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Family 10 and 11 xylanase genes from Caldicellulosiruptor sp. strain Rt69B.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Caldicellulosiruptor sp. Rt69B.1
Bacteria; Firmicutes; Clostridia; Clostridiales;
Syntrophomonadaceae; Caldicellulosiruptor.
1 (bases 1 to 5437)
1 (bases 1 to 5437)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (05-DEC-1997) SBS, I
Street, Auckland, New Zealand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (bases 1 to 5437)
Morris,D.D., Gibbs,M.D.,
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Extremophiles 3 (2), 103-111 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99283888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10356996
                                                                                                                                                                                   1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSTSYENLIYMRDVPSNTWVEPSGSYSIPAGVTVSELLLYVEAQNANLAFWVDDLKIY
DLSKLAEPEWEIPSLIEKYKDYFKUGVALGYKSIASOTEKKWYLKHFNSITAGNEMKP
SELLISENNYNFSKADEFVNFATSMNIÄIRGHTLVWHEDTPDWFFKDANGNTLSKDAL
LSRLKOYIYTVVGRYKGKVYANDVVNEÄIDESOGNGFRRSNWYNICGPEYIEKAFIWA
HEADPDAKLFYNDYNTENSQKROFIYNMIKSLKEKGVPIHGIGLOCHINLDWPSISEI
ENTIKLFSSIPGLEIHTTELDWSFYQNGSSTSYSTPPBDLLIKQAMRYKELFPLFKKY
NVITNVTFWGLKKDYSMLSQNFGKSDYDLFGNYKSKYATNOAMRYKELFULFKKY
NVITNVTFWGLKDDYSMLSQNFGKSDYDLFDANKSYATOPSBESYGALKVWYANGNMS
STTNVLNPKIKIENVGTTAVDLSRVKVRYWYTIDGEAAQSVSVASSINPAYIDVRVVK
LGANAGGADYYVEVGFKSGAGVLAAGGSTKEIRLSIGKSSGSYNQSNDYSVRSANSYI
                                                                                                                                                                                                                                                                                                TPTPTVTVTPTPTCTPGTGSGLKVLYKNNETSASTGSIRPWFKIVNGGSSSVDL
SRVKIRYWYTVDGDKPQSAVCDWAQIGASNVTFNFVKLTSGVSGADYYLEVGFSSGAG
QLQPGKOTGDIQVRFNKNDWSNYNQADDWSWNQSMTNYGENAKYLLYVDGVLYWGQEP
GGATPAPTSTATPTPTATVTPTPTATPTPTATPTIPITFTPTKFVGKIPP
NNNHLISHKFGADPAVLVYGGRVYMYLTNDILEYDENGNVKDNSYSKINKITVISSDD
LVWTDHGEIEVAGPNGVAKWANFSWAPAVAYKKINGKDRFFLYFGNSGGGIGVITAD
SPTGFWSDPLGRPLITWSTPGVQGVVMLFDPAVLVDDDGKAYIYFGGGVPQGQDAMPN
                                                                                                                                                                                                  ANASNNMCLTGIDSGDWIALSRVDFGNAGPQKFEAQVSNINGKGYIELRIDSVDGRTI
AVAEVLPQSGSSSQWVKVEANVENVTGVHDLYLVFRGEKKSNLFDMDCWRFVR"
                                                                                                                                                                                                                                        TARVLQPGDDMISVVGSAATIPAPYMFEDSGINKIGNTYYYSYCTNFAQRPQGSPPAG
AIAYMTGKSPVGPWEYRGVILRNPGNFFGVGGNNHHQLFEFNGKWYIAYHAQTLAKDL
GVAKGYRSPHINQVQIENGVIKEVTADYKGVAQVKNFDPYRMVEAETFAWCAGISTKK
                                                                                                                                                                                                                                                                                                                                                                                                                                            ENEKVTGY1DDVLVMGREPGRNAQ1KVMYANGNLSSPTNVLNPKIKIENVGTTAVDLS
RVKVRYMYT1DGEATQSVSVASSINPAYIDVRVVKLGARAGGADYVEVGFKSGAGVL
AAGQSTKEIRLSIQKSGSSYNQSUNDSVSVRSANSYIENEKVTGYIDDVLVMGKEPSRGT
KPAGEVTPAPTPTSTPTPTTTPAPTSAPTPSPTVTATPTPTPTPTATPTPTTTTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYQKPVAFGISAVYDDGSGVKSTLIGEVVAIPNYWKKIVGKWTPNISNVRNLLIVVHT
IVESGVDYNVDYIQIMDDNSYLSNAVTFSSGFESGTTEGWQARGSGVTVKPDSVVAYN
GKYSLYVSGRTSNWHGAQIPVDTILEQGKVYKISVWVXQNSGSTQKWSLTWQRRFATD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="xynC"
65. .5404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:70295"
65. .5404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SFFAYGKSNIAVDMGNAYNGKSSIRVSNRSSIWDGVAVDVKNIMNNGTTWVVSAYVKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transI_table=11
/product="family 10 xylanase"
/protein id="AAB95326.1"
/db_xref="GI:2760909"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Caldicellulosiruptor sp. Rt69B.1"
/mol_type="genomic DNA"
/strain="Rt69B.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="xynC"
/EC_number="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                translation="MKKRVISILSLLFFLINTLVGTLIFHQEAKAAAYTVDFEGTDTL/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="XynC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           location/Qualifiers
                                     0.383
170.00
48.00%
                  16.62%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _number="3.2.1.8"
                                                                                                                                                                                   ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ford, M.,
                                                                                                                                                                               Q
                                     Matches:
Conservative:
Mismatches:
  Indels:
Gaps:
                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 University of Auckland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Thomas, J.
5437
42
6
42
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and Bergquist, P.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3A Symonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 18
AF093132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF093132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF093132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lee,L.H., Wri
Haidaris,C.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10721706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases
                                                                                                                                                                                                                                                                                                                                                                                     ĝ
```

```
US-10-081-935-4 (1-194) x CASR69XYN2 (1-5437)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3338 CCAACACCGÁCAGTGÁCGGTGACACCGÁCG---CCGÁCÁCCGACAGGGACACCTTGGCACG 3394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pneumocystis carinii f. sp. muris
pneumocystis carinii f. sp. muris
Eukaryota; Fungi; Ascomycota; Pne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (18-SEP-1998) Microbiol.
Med. & Dent., Box 672, 601 Elmwood
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lee,L.H., Gigliotti,F., Wright,T.W., Weinberg,G.A. and Haidaris,C.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA, complete cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pneumocystis carinii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF093132.1 GI:6958205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pneumocystis carinii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Molecular characterization of KEX1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pneumocystidaceae; Pneumocystis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAGTGGTTTGAAGGTACTATACAAGAACAATGAGACCAGTGCGAGCACAGGTTCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GlySerPheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAla 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThr 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCACACCTGCACCGACATCAGCCCCGACACCGAGCCGAACAGTGACAGCAACGCCGACT 3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGlu 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGlu 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlySerAsnValArg-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGCGGGTGAAGTGACACCGGCACCGACGCCGACATCAACGCCAACACCGACACCTACA 3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 3114)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242 (1-2), 141-150 (2000)
                  /translation="mvyxiflafflcwiflirvkseekpkdfenkdyyhfhfskdvdl
dafsoelgfbyeealehldghylfsidkgvsddkieekikdyfglegniidgfbsdkl
fyyekokllarekrnvirdpmyldtsonsgdtgnvnsgekodoiklleekfeeikkkl
nisdkyfgkomylfnkkonggvdinvtglwlegitgkgytvgvtddglykknedllon
Caegsydfntotsdfbfpkrsddthgtrcageivaakntfcgvgvaydakvsggirflas
VLSSWLEGKALSYRYDINDIYSCSWGPRDDGKTIEGVPYSAYNSIINGINLGRKGLGS
                                                                                                                                                                                                                                                /note="similar to
subtilisin-like se
                                                                                                                                              /codon_start=1
/product="kexin-like protease KEX1"
/protein_id="AAF32493.1"
/db_xref="GI:6958206"
                                                                                                                                                                                                                                                                                                                       /gene="kex1"
10. .3045
                                                                                                                                                                                                                                                                                                                                                                                 1. .3114
                                                                                                                                                                                                                                                                                                                                                                                                   mouse
                                                                                                                                                                                                                                                                                                                                                                                                                              isolated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wright, T.,
                                                                                                                                                                                                                                                                                                  /gene="kex1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Pneumocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 to 3114)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="forma specialis: muris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  xref="taxon:42066"
                                                                                                                                                                                                                                                                                                                                                                                                   lung"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Simpson-Haidaris, P.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                Pneumocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3114 bp
sp. muris
                                                                                                                                                                                                                                             to prokaryotic and eukaryotic serine proteases"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pneumocystidomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    carinii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA linear PLN 22-FEB-2000 kexin-like protease KEX1 (kex1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            & Immunol., Univ. Rochester
Ave., Rochester, NY 14642, L
                                                                                                                                                                                                                                                                                                                                                                                                                                carinii-infected C.B17 SCID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a kexin-like protease in mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----AlaServalGlyGlyIle 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simpson-Haidaris, P.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gigliotti, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  вþ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3454
```

```
RESULT 19
AC128838/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-4 (1-194) x AF093132 (1-3114)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
RS Muzny, D.Marie, Metzker, M.Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Anyalebechi, V., Aoyagi, A., Ayodeji, M., Baca, E., Baden, H., Anyalebechi, V., Aoyagi, A., Ayodeji, M., Baca, E., Baden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Brown, M., Bryant, N., Buhay, C., Burch, P., Burrell, K., Calderon, E., Cardenas, V., Catter, K., Cavazos, I., Ceasar, H., Center, A., Chen, Z., Chu, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Clacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davila, M. L., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Duale, M., Escotto, M., Eugene, C., Evans, C.A., Falle, T., Fan, G., Fernandez, S., Finley, M., Flagg, N., Forbes, L., Foster, M., Foster, P., Fraser, C., Gabisi, A., Ganta, R., Garona, T., Garza, M., Gebregoergis, E., Geer, K., Gill, R., Graddy, M., Guerra, W., Guerra, W., Guerra, W., Hamilton, K., Hamilt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2176 CCAACATCTGAACCAACACCTCAACCAGCACCACCTCAACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2068 CCAACATCTGAGCCAACATCTGAGCCAACATCTGAGCCAACATCTAAACCAACACCTCAA 2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2008 CCAACATCTGAGTCAACATCTGAACCAACACCTCAACACCTCAACAACAACAACACCTCAG 2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             133 ProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThr 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113 ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGlu 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      153 GlySerPheThrValThrGlyArgProThrAlaSerThrProAla 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC128838.3 GI:25073624
AC128838.3 GI:25073624
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ENRICHED
RAttus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC128838 256635 bp DNA linear HTG 19-NOV-2002 Rattus norvegicus clone CH230-395E20, *** SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGlu 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAACACCTCAGCCAACATCTGAGCCAACATCTGAG------CCAACATCTGAG 2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 256635)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IYVFGSGNGGYYDNCNYDGYVVSPYTITIGSIDVRGIRHYFSEQCSSVLASTYSGSIV
TNARIYTTDVGEKGCSTVHSGSSASTPIAAGVIALULSYRPNLTWHDIQGLIVESAVP
FSLDYPGWEKLPSGRYYHYYFGYGKLDAYRMVEARANFKHLNPQARFSVPMIIVNKKF
SENNGHITDKFMLIKAYEDYYNFGKLERVSVTLYFQHAKRGSLEINITSPSGTSMIIVNKKF
SENNGHITDKFMLIKAYEDYYNFGKLERVSVTLYFQHAKRGSLEINITSPSGTSMIT
HRRLHDKNYGYVHWTFSTYKHWGEPIVGEWTIDIEDQKIFNLDGEFYNWQLHFFGESA
DLTKTQSIVYPFIITRSPSSPIGEPTVLTFTSAATISFSVSGQFTSSSTISEFTPQPTPQ
PTPQPTSEPTSEPTSKPTPQPFPTPQPTSEPTSEPTSEPTSPTPQPAPPQ
PTPQPTSEPTSEPTSKPTPQPFPTPQPTSEPTSEPTSPTSPTPQPAPPQ
PAPQPAPQPAPPQPAPPQPPPPQPVPPQPWPSRPAPPKTPQPAPPRFPK
PARFOPAPGPAPSKASSKTSSTSSSFISSTSMSSFISASGRSSSTOS
ASHTSFFKRNLLLISILIASIILLIFGFLFLFIRFKKRDSYTNGHPVTETLNYESDP
NMSGETEKATMLKRNQOYTSSDLSDTEDPNMYERRILRS"

8. 6.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.15 7 8.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.262
169.00
61.33%
42.67%
16.52%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              515 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256635 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3114
32
14
25
```

REFERENCE AUTHORS TITLE

JOURNAL

COMMENT

coverage: 6x in Q20 bases; sum-of-contigs estimation

Center: Baylor College of Medicine Center code: BCM Web site: http://www.hgsc.bcm.tmc.edu/

TITLE JOURNAL REFERENCE AUTHORS TITLE

JOURNAL

á

밁

á 문 á 밁 Ş ORIGIN

Score:

В

KEYWORDS SOURCE ACCESSION VERSION

REFERENCE

AUTHORS

```
Hernandez, R., Hines, S., Hladun, S.L., Hodgson, A., Hogues, M., Hollins, B., Howells, S., Hullyk, S., Hume, J., Idlebird, D., Jackson, A., Jacob, L., Jacob, L., Jiang, H., Johnson, B., Johnson, R., Levan, J., Lewis, L., Li, Z., Liu, J., Liu, J.
                                                                                           District (12 Nov 2002) Number Genetics (13 April College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Nov 19, 2002 this sequence version replaced gi:23915267.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence may extend beyond the ends of the clone and there may be sequence genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence reads. Both end sequences and whole genome table only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (24-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 3 (bases 1 to 256635) Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (19-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 256635)
----- Genome Center
```

Thu

```
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                 8
                                                                                                                                                               ş
                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-4 (1-194) x AC128838 (1-256635)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                            87453
                                                                                                                                                                                                                                                                                     87513
                       120
                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                        57
                                                                                                                                                                                                                                                                                                                                                                                                   39
                                                                                                                                                                                                                                                 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank draft_data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 4 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
GluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAla 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           as soon as it is available and the accession number will be preserved.
                                                          TCATCCATGGCATCATCCATGGCATCATCCACTGCATCACCCACTGCGTCACCCACTGCG
                                                                                                                                                                       IleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluPro---- 109
                                                                                                                                                                                                                                                                                     GAACTGCATCATTGTÄCÄTTATGCATTATCTGTGCCTCACCCACTGCATCACCCATGGCA 87454
                                                                                                                                                                                                                                                                                                                        -----GlyGlnIleThrProCysValGluGluAlaCysProLeuAsp------Ala 71
                                                                                                                                                                                                                                                                                                                                                             GGTACTGTAAATGCCACCGACGGGAAGCTGAGCTCTGGGCTACCTCTGCTTCCACTGTAC 87514
                                                                                                                                                                                                                                                                                                                                                                                               GlyCysThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuPro-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53341
                                                                                                                                 TCACCCATGGCATCATCCÁCTGCÁTCACCCACTGCATCACCCACTGCGTCACCCATGGCA 87334
                                                                                                                                                                                                            TCATCCACTGCGTCACCCATGGCATCATCCACGGCATCATCCACTGCATCACCCACTGCA 87394
                                                                                                                                                                                                                                             ArgIleSerValSerAsnIleValValAspGlnCysSerLysAlaGlyValProIleAsp 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            203045
203145
215892
215992
254752
254852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="wgs_contig"
227472. .229014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58930.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="wgs_end_extension
clone_end:Sp6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Rattus norvegicus"
/mol_type="genomic DNA"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone_end:Sp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="wgs_co
58930. .61273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="wgs_contig"
53008 c 50940 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="clone_boundary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone="CH230-395E20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20.2
167.00
39.35%
34.19%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 25663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          203044: contig of 203044 bp in length 203144: gap of unknown length 215891: contig of 12747 bp in length 215991: gap of unknown length 254751: contig of 38760 bp in length 254751: contig of 38760 bp in length 254851: gap of unknown length 256635: contig of 1784 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _sequence:B2149743"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 6668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _contig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50222 t
                                                                                            ThrAlaGluProThrGluGluProThrAla 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  49124 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256635
53
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             70
24
                                                          87274
                                                                                                                                                                                                                                                                                                                                                                                                   56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                   Ś
                                                          밁
                                                                                            Ś
                                                                                                                                                                       DB:
```

á 밁 á á

```
AY166602
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                           Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                      US-10-081-935-4 (1-194) x AY166602
                                                                                                                                                                       Query Match:
                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87165 TCACCCATGGCATCATCCACTGCGTCA---CCCATGGCATCATCC 87124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87273 TCACCCATGGCATCACCCACTGCATCACCCACTGCATCACCCACTGCGTCACCCACTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140 ValproThrGlyThrGlyGlyGlyValproThrGlyThrGlySerPheThrValThrGly 159
                                                                                                                                                                                                                                                             Scores:
                                                     436 ATGAAGTTCAACAGTGGTCTCCTCGCCGGCGCTGCCGTCCTGGTTGCCGGTGTCGCCACG
                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (17-OCT-2002) Fungal Genomics Laboratory, North Carolina State University, Campus Box 7251, Raleigh, NC 27695, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kulkarni,R.D. and Dean,R.A. Identification of proteins interacting with adenylate cyclase and cAMP-dependent protein kinase A in the rice blast fungus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Magnaporthe grisea
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kulkarni, R.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Magnaporthe grisea (anamorph:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY166602.1 GI:24935338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY166602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AY166602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySer 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCACCCATGGCATCACCACTGCATCACCCACTGCA-----TCACCCACTGCG 87166
 AlaGln----
                                                                                    MetGlnPheSerHisAlaLeuIle-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 1500)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 1500)
                                                                                                                                                                                                                                                                                                                 323
                                                                                                                                                                                                                                                                                                                                              /trānblation="mkfnsgllagaavlvagvataqdcisvalsaipscaqpcflnga
ptigcsgtdfkcqcqqqakmfaavescvqkscpesefqktidgsdkvctcasggpasn
naggagntvnpssfipgptstasptttvaaptgtpsgrpsavptaaanmaavecsivv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="MAC1 interacting join(436. .706,782. .1032) /gene="acil"
                                                                                                                                                                                                                                                                                                                               GAVGGALWVALGL"
                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/product="MAC1_interacting
/protein_id="AAN64312.1"
/db_xref="GI:24935339"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="acil"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Magnaporthe grisea"
/mol_type="genomic DNA"
/db_xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="ACI1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene="acil"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         oin(<436.
                                                                                                                                                                       166.00
38.89%
26.50%
16.23%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            grisea MAC1 interacting
                                                                                                                                                                                                                                                                                                                 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Choi, W.
                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .706,782.
                                                                                                                                                                                                                                                                                                               383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and Dean, R.A.
                                                                                                                      (1-1500)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1500
-LeuProAspIleProProCysAlaLeuAsnCysPhe 31
                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                           Length:
Matches:
                                                                                                                                                                          Mismatches:
Indels:
                                                                                                                                                        Gaps:
                                                                                                                                                                                                         Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pyricularia grisea
                                                                                                                                                                                                                                                                                                                 354
                                                                           AlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA linear PLN 17-DEC-2002 protein 1 (acil) gene, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                      1500
62
29
64
80
                                                     495
```

```
32 ValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCys---
                                                                                                                                                                                                                                                                                               Submitted (24-JUL-1998) Biochemistry, Universitaire, Ste-Foy, Que GIK 7P4, (Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bourbonnais,Y., Lamarre,C. and Deslauriers,N. Expression cloning of the Candida albicans CSA1 mycelial surface antigen with similarity to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    immitis antigen 2
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; mitosporic Saccharomycetales; Candida.

1 (bases 1 to 4291)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complete cds.
AF080221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF080221
4291 bp
Candida albicans mycelial surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 4291)
Bourbonnais, Y. and Deslauriers, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF080221.1 GI:3406797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             regrecceregerecectrageraccectregere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCGCAGCCCGACCGGAACACCGTCTGGCCGACCCTCGGCGGTGCCCACT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lProIleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGl 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LeuAspAla-ArgIleSerValSerAsnIleValValAspGlnCysSerLysAlaGlyVa 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeu 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rProAlaGluPheProGlyAlaGlySerAsnValArgAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    y Gly Gly Val Pro Thr Gly Thr Gly Ser Phe Thr Val Thr Gly Arg Pro Thr Ala Ser Thr Control of the Control of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----AlaGluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCGTCAACCCGTCCAGCTTCATC-CCAGGCCCGACGTCGACTGCTTCTCCCACCACCAC 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              uProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThr----- 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTCTGGAGGTCCCGCTTCAAACAACGCCGGGGCCGCCGGAA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAMATACGTCGCATGCATACAAACAAAAATGTACTAACACAAAAGACAGTCTGCACGTGC 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTTCCAAAAGACCATTGACGGATCTGACAAGGGTGAGTTGGTCTGCCGGCAAGAATGC 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCAGGCCAAGATGTTTGCCGCCGTCGAGAGCTGCGTGCAAAAGAGCTGCCCAGAGTCT 672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerLysProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysPro-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCAACGGCGCCCCGACCATTGGCTGCTCCGGC---ACCGACTTCAAGTGCCAGTGCCAG 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCCAGGACTGCATCAGCGTCGCGCGTCGTCGGCCATCCCGTCGTGCGCAGCCGTGCTTC 555
                 /db_xref="ATCC:32354"
/db_xref="taxon:5476"
515: .4126
                                                                                                                                     /organism="Candida albicans"
/mol_type="genomic DNA"
/strain="ATCC32354"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGCCGCAAACATGGCCGCTGTGGAGTGCAGCATCGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antigen precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                     Universite Laval,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene encoding
Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLN 09
(CSA1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----AT 837
                                                                                                                                                                                                                                                                                                                                                                                     Cite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50
                                                                                 Ś
        밁
                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                              US-10-081-935-4 (1-194) x AF080221
                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sig_peptide
        656
                                               14 GlyLeuAlaSerAlaGlnLeuProAspIleProProCysAlaLeuAsnCysPheValGlu
1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QDVVSATSLGTSICSVAGVWD PYMVPANVQSSLSAAATAVASSSEPAETSSEPAES
SQSVESSQPAETSSSEPAETSSSEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEPAETSSEEPAETSSEEPAETSSEEPAETSSEEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSEPAETSSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Region: hydrophobic Cys-rich domain"
2762. 3067
2762. 3067
/gene="CSA1"
/note="Region: hydrophobic Cys-rich domain"
4067. 4123
/gene="CSA1"
/note="encodes putative GPI-anchoring determinant"
1 962 c 835 g 1352 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Region: |
2207. .2512
/gene="CSA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="putative"
566. .4123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MLPSIVISIVLASFVSAESSITEAPTTTAEDNPYTIYPSVAKTA
SINGFADRIYDQLPECAKPCMFQNTGVTPCPYWDTGCLCIMPTFAGAIGSCIAEKCKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="CSA1"
515. .4126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1721. .2026
/gene="CSA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Region:
1211. .1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="mycelial
/note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eivnitktvssgketgvsqatvaanthsvaianmantkfastmsllvasfvfvglfi'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="mycelial surface
/protein_id="AAC29486.1"
/db_xref="GI:3406798"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immitis antigen 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="cell wall protein; Csalp; differential expression in yeast and mycelial forms; similar to Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="CSA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene="CSA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene="CSA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene="CSA1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="CSA1"
                                                                                                                                                                                                                                                    0.564
165.50
38.69%
24.62%
16.18%
                                                                                                                                                                   (1-4291)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hydrophobic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hydrophobic Cys-rich domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hydrophobic Cys-rich domain"
                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cys-rich domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antigen'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 precursor'
715
                                                                             ü
```

REFERENCE AUTHORS TITLE

KEYWORDS SOURCE ORGANISM

ACCESSION

DEFINITION

VERSION

RESULT 21 AF080221

21

В á

990

179 949 165

á 밁

밁

á

897 127 밁 Ş 밁

Ś 밁

145

Ś

793

Ś

69

밁

733

á

문

Ś 밁 á В

496

용

613

JOURNAL REFERENCE AUTHORS TITLE

FEATURES

source

gene

JOURNAL

```
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                           JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 22
AF254147
                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34
                                                                      3 (bases 1 to 4792)
3 (bases 1 to 4792)
Braun, B.R. and Johnson, A.D.
Direct Submission
Submitted (11-APR-2000) Microbiology, UC San Francisco,
Submitted (21-APR-2000) Microbiology, UC San Francisco,
                                                                                                                                                                                                      2 (bases 1 to 4792)
Braun, B.R., Head, W.S., Wang, M.X. and Johnson, A.D.
Identification and characterization of TUP1-regulated
Candida albicans
                                                                                                                                                                                                                                                                                                Eukaryota; Fungi; Ascomycota; Saccharomycetina; Saccharomycetes; Saccharomycetales; mitosporic Saccharomycetales; Candida.

1 (bases 1 to 4792)

Braun, B.R. and Johnson, A.D.

TUP1, CPH1 and EFG1 make independent contributions to filamentat: in candida albicans in candida albicans
Genetics 155 (1), 57-67 (2000)
                                                                                                                                                                                           Genetics 156 (1), 31-44
                                                                                                                                                                                                                                                                                                                                                                                                                Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF254147
AF254147.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Candida albicans
                                                                                                                                                                                                                                                                                        20253093
                                                                                                                                                                                                                                                                                                                                                                                                                               Candida albicans
                                                                                                                                                           10978273
                                                                                                                                                                                                                                                                      10790384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThr 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGGTGCCTGCAAATGTCCAGAGCAGTTTAAGTGCTGCCACTGCCACTGCTTGCATCGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerValSerAsnIleValValAspGlnCysSerLysAlaGly-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GluLeuProGlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIle 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACACTGGTGTGACCCCATGTCCA---TACTGGGATACTGGGTGTTTGTGTATTATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCysSerLysPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACACCATCTACCCAAGTGTTGCCAAGACT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrProAlaGlu-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGACTTCATCGGAAACATCATCCGAACAACCTGCTTCATCTGAACCTGCTGAAACTTCA 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTCAACCTGCTGAAACCTCATCATCTGAACCTGCTGAGACTTCATCATCTGAACCTGCT 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThr 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----ProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThr 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---ValProIleAspIle------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGCTACAAGTTTGGGAACTTCCATTTGTTCCGTTGCTGGTGTGTGGGATCCATACTGG 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACATTTGCTGGTGCCATTGGTTCTTGTATTGCTGAGAAGTGTAAAGGCCAAGACGTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAGAAGAATCTTCTACAATCACTTCAGCCCCA-----TCAACTCCTGAAGATAACCCA 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGAACAACCAGTTGAAACATCTTCTGAACCAGCTGGATCTTCTCAGTCTGTTGAATCT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----PheproGlyAlaGlySerAsnValArgAlaSerValGlyGlyIleAla 184
/organism="Candida albicans'/mol_type="genomic DNA"
/db_xref="taxon:5476"
                                                               Ave, S-410, San Francisco, Location/Qualifiers
                                                  .4792
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:9963991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4792 bp DNA l
putative cell wall protein
                                                                                                                                                                                           (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -GCTTCTATCAATGGTTTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear PLN 21-SEP-2000
n (WAP1) gene, complete
                                                                                                                                                                                                                        genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                            Ş
                                                                                밁
                                                                                                            Ş
                                                                                                                                           밁
                                                                                                                                                                       á
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                    1376
                                                                                                                                                                                                         1493
                                                                                                               93
                                                                                                                                                                            88
                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                   5
4
                                                                                                                                                                                                                                                                                                                                                                ω
4
                                                                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ø
```

```
gene
                           /translation="miles | visivlasfysaess| teaptitaednpytiypsvakta
singfadriyoolffeckechechywdtgcllcimpffagaigsciaekckg
gdvvsatslgtsicsvagvmbpymmvpanvogslsaaatavassseopvetssepags
sosuessopaetsssepaetssefaetssetseopaetsseepaetsseepaet
sosuessopaetssepaetssefaetssetseopaetsseestitsaes
rpednpytiypsvaktasingfadriydolffecakpcmpvymvpanvogslsaaatav
prsseosvetssesaessofyaetssetsseopsetssetssooplesissaaatav
prsseosvetssesaessosvessopaetsseopsetssetssooples itsapbssat
sssstistfiktasingfadriydolffecakpcmpvymvpanvogslsaaatav
prsseosvetssesaessosvessopaetsseopsetssetssooples vaslsvaaatav
prsseostitstfiktasingfadriydolffecakpcmpontgitpcpymdagclcvmpopa
gaigscvadscrooplisvtslctsvcsvagvapymndpavvsslsvaatavptsb
sasfingfadriydolffecakpcmpontgvtpcpymdtgclcimptfagaigsciaekck
godvustsaabasoopsetsseesstissessetisapspytiypsvakt
asingfadriydolffecakpcmpontgvtpcpymdtgclcimptfagaigsciaekck
godvustaalsoissoopsetsseopsetssesaessa
sovpottsaassoopsetsaapsvaspsvaspssoopaperunsseasvypsos
annssaapsunsvasaapsussvaapsussoopaperunsseasvypsos
annssaapsussoopsetssesvaapssoopapetsvassesvapsoopaperunsseavipsoo
savassaapsussoopsetssesvaspssoopaperunsseavipsoop
essiissvatsaabahkteviaseavagtavasaassaapsussoopaperunsseavipsoo
savassaapsussoopsetssessaasseamxtvssluevasaavax
otslaavossaasvolsaahaoksseavevagtavasaassaapteivnitktvss
gkettovsoottaantysvaiammkrastmsllvasfvroglefi"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1175. .4231
/gene="WAP1"
1175. .4231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="contains predicted signal sequence and GPI addition sequences, indicating localization in the cell wall; contains four cysteine-rich repeats similar to the single repeat of RbtSp and to Coccidioides imitis proline-rich antigenic protein PRA; Waplp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="putative cell v
/protein_id="AAG09792.1"
/db_xref="GI:9963992"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene="WAP1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _table=12
ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           wall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  addition
```

0.624 165.50 38.69% 24.62% 16.18% Length:
Matches:
Conservative:
Mismatches:

Indels:

4792 28 89 33

US-10-081-935-4 (1-194) x AF254147 (1-4792)

TCTCAACCTGCTGAAACCTCATCATCTGAACCTGCTGAGACTTCATCATCTGAACCTGCT 1732 ATGGTGCCTGCAAATGTCCAGAGCAGTTTAAGTGCTGCTGCCACTGCTGTTGCATCGTCT 1612 AlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCysSerLysPro 53 GlyLeuAlaSerAlaGlnLeuProAspIleProProCysAlaLeuAsnCysPheValGlu 33 AlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThr 130 TCTGCTACAAGTTTGGGAACTTCCATTTGTTCCGTTGCTGGTGTGTGGGATCCATACTGG 1552 SerValSerAsnIleValValAspGlnCysSerLysAlaGly-------ACATTTGCTGGTGCCATTGGTTCTTGTATTGCTGAGAAGTGTAAAGGCCAAGACGTTGTT 1492 GluLeuProGlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIle 73 AACACTGGTGTGACCCCATGTCCA---TACTGGGATACTGGGTGTTTGTGTATTATGCCA 1432 ---ValProIleAspIle-----TCTGAACAACCAGTTGAAACATCTTCTGAACCAGCTGGATCTTCTCAGTCTGTTGAATCT -----ProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThr 110 1672 92 87

```
₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC095003/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
   Anyalebechi, V. Aoyagi, A. Ayodeji, M., Baca, E. Baden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Biswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, M., Barnstead, M., Benahmed, F., Cardenas, V., Carter, K., Cavacos, I., Ceasart, H., Center, A., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Clacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Clacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Clacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Clacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Clacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Chen, Y., Chen, Z., Chen, Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1847 TACACCATCTACCCAAGTGTTGCCAAGACT-----GCTTCTATCAATGGTTTTGCT 1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1793 TCAGAAGAATCTTCTACAATCACTTCAGCCCCA----TCAACTCCTGAAGATAACCCA 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1733 GAGACTTCATCGGAAACATCATCCGAACAACCTGCTTCATCTGAACCTGCTGAAACTTCA 1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 169 -----PheProGlyAlaGlySerAsnValArgAlaSerValGlyGlyIleAla 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 151 GlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrProAlaGlu----- 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      131 HisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyValProThr 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unordered pieces.
AC095003
AC095003.7 GI:30467553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC095003

238046 bp DNA linear HTG 09-I
Rattus norvegicus clone CH230-6K12, WORKING DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Muzny, D. Marie., Metzker, M. Lee., Abramzon, S., Allen, C., Allen, H., Alsbrooks, S., Amin, A., A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 238046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus
Zhou, J., Zhou, X., Zhao, S., Dunn,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Amin, A., Anguiano, D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Adams, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HTG 09-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Alder,J.,
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
misc_feature
                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   On May 9, 2003 this sequence version replaced gi:24818271. The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence may extend beyond the ends of the clone and there may be sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (15-SEP-2001) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA 3 (bases 1 to 238046)
Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                * (see http://www.hgsc.bcm.tmc.edu/docs/Genbank draft data.html).

* NOTE: This is a 'working draft' sequence. It currently

* consists of 2 contigs. The true order of the pieces

* is not known and their order in this sequence record is

* arbitrary. Gaps between the contigs are represented as

* runs of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence

* as soon as it is available and the accession number will

* be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (09-MAY-2003) Human Genome Sequencing of Molecular and Human Genetics, Baylor College Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 238046)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Niederhausern, A., Weiss, R., Weinstock, G. and Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission

    NOTE: Estimated insert size may differ from sequence length

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Assembly program: Atlas;
Consensus quality: 226044 bases at least Q40
Consensus quality: 227924 bases at least Q30
Consensus quality: 227924 bases at least Q20
Consensus quality: 229373 bases at least Q20
Estimated insert size: 23613; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center project name: GBYH
Center clone name: CH230-6K12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality coverage: 9x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center: Baylor College of Medicine Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----- Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Web site: http:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submission
                                                            /note="clone_boundary
clone_end:T7
site:EcoRI
                                                                                                                                                         clone_end:T
6066. .6753
                                                                                                                                                                                         /note="wgs_end_extension
clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                         clone="CH230-6K12"
                                                                                                                                                                                                                                                                                                         organism="Rattus norvegicus"
|mol_type="genomic DNA"
|db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                      .238046
                                                                                                                                                                                                                                                   .1680
                            sequence: BH360832'
                                                                                                                                                                                                                                                                                                                                                                                                                                                            236832: contig of 236832 bp in length 236932: gap of unknown length 238046: contig of 1114 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             //www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Smith, D.R., Holt, R.A., Smith, H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of Medicine, One
```

```
RESULT 24
AC098905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-4 (1-194) x AC095003 (1-238046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     167713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   167833
Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Anyalebechi, V., Aoyagi, A., Ayodeji, M., Baca, E., Baden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Biswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, N., Buhay, C., Burch, P., Burrell, K., Calderon, E., Cardenas, V., Carter, K., Cavazos, I., Ceasar, H., Center, A., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Cleveland, C., Cockrell, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davila, M.L., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Egan, A., Escotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Fraser, C.M., Gabisi, A., Ganta, R., Garcia, A., Garner, T., Garza, M., Gebregeorgis, E., Geer, K., Gill, R., Grady, M., Guerra, W., Guevara, W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC098905.6 GI:30521215
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACO98905 225849 bp DNA linear HTG 10-MAY-2003 Rattus norvegicus clone CH230-163J19, WORKING DRAFT SEQUENCE, 2
                                                                                                                                                                                                                                                                                                                      Muzny, D. Marie., Metzker, M. Lee., Abramzon, S.,
                                                                                                                                                                                                                                                                                                                                                                  Rattus
                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Ve.:tebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlySerPheThrValThrGlyArgProThr-----AlaSerThrProAlaGluPhe 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGlu 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGlu 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThr 152
                                                                                                                                                                                                                                                                                                                                            (bases 1 to 225849)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="wgs_end_extension
clone_end:Sp6"
235657. 236832
/note="wgs_end_extension
clone_end:Sp6"
clone_end:Sp6" 67565 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            end_sequence:BH360837"
229310. .230352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      site: EcoRl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="clone_boundary
clone_end:Sp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23.1
165.50
58.02%
39.51%
16.18%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7420 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   238046
32
15
31
3
                                                                                                                                                                                                                                                                                                                      Adams, C., Alder, J.,
                                            Foster, P.,
```

TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL

REFERENCE AUTHORS TITLE

JOURNAL

COMMENT

Center clone name: CH230-163J19
------ Summary Statistics
Assembly program: Atlas 3.0;
Consensus quality: 212145 bases at
Consensus quality: 214496 bases at
Consensus quality: 216260 bases at

least

000

Web site: http://www.hgsc.bcm.tmc.edu/

Center: Baylor C Center code: BCM

College of Medicine

```
RESULT 25
                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
DB:
                                                              SOURCE
                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-4 (1-194) x AC098905 (1-225849)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
           REFERENCE
                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                    Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rred
                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
o
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                     211119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210879
                                                                                                                                                                                                                                                                                                                                                                                210999
                                                                                                                                                                                                                                                                                                                                                                                                                                                      210939
                                                                                                                                                                                                                                                                                                                                             140
                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                        160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
       Dictyostelium discoideum Dictyostelium discoideum Eukaryota; Mycetozoa; Dic 1 (bases 1 to 4675)
                                                                                                               protein-like
U20608
                                                                                                                          Dictyostelium discoideum unknown protein-like protein, orf1, orf2
                                                                                              U20608.1
                                                                                                                                                                 DDU20608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.hNOTE: This is a 'working draft' sequence. If currently consists of 2 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                        GluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAla 139
                                                                                                                                                                                                                                     CAACCAACC --- AACCAACCAACCAACCAACCA 211148
                                                                                                                                                                                                                                                                      ArgProThrAlaSerThrProAlaGluPhePro 170
                                                                                                                                                                                                                                                                                                                                         ValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGly 159
                                                                                                                                                                                                                                                                                                                                                                          CAACCAACCAACCAACCAACCAACCAACCAACCAACCAACCAACCAACCAACCAACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAla 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ValAspGlnCysSerLysAlaGlyValProlleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          222216
222316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Estimated insert size: 223073; sum-of-contigs estimation Quality coverage: 8x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="wgs_contig" 220987. .222215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="wgs_contig"
214638. .217165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="wgs_contig"
46663 c 49486 g
                                                                                              GI:676858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="genomic DNA"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      222215: contig of 222215 bp in length 222315: gap of unknown length 225849: contig of 3534 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone="CH230-163J19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . .225849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25.2
164.50
51.65%
37.36%
16.08%
                  Dictyosteliida; Dictyostelium
                                                                                                                                                               4675 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61178
                                                                                                                             spore germination-specific
and orf3 genes, complete complete
                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8312 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               225849
34
13
43
1
                                                                                                                                                                 linear
                                                                                                                                                             INV 13-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       data.html).
                                                                                                                                                                                                                                                                                                                                                                                                                                                 210998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                             Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               intron
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochemistry 29 (31), 91002566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ennis, H.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 4675)
NFIIIIAYEFSPIKVESYNILTVSPTKFLLTINISSSVGINAVQFLSTVSKSSYEFLI
              /translation="mfcTsfsnnffkyTsylyQfdTnsvvkGfpyGfsGdnnnyknnI
CfertpQatyInfrtennyddyktfnvpElrrkltkkkkkkkllkskyyfflnInfIn
                                                /product="unknown"
/protein_id="AAB54081.1"
/db_xref="GI:2081631"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LKNL"
                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'strain="Ax3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone="270G3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . .4675
```

ફ 밁 ş 밁 Ś 밁 á 밁 Ś

밁

```
Submitted (02-FEB-1995) Herbert L. Ennis, Roche Institute of Molecular Biology, 340 Kingsland Street, Nutley, NJ 07110, U. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Giorda,R., Ohmachi,T., Shaw,D.R. and Ennis,H.L. A shared internal threonine-glutamic acid-threonine-proline repeat defines a family of Dictyostelium discoideum spore germination specific proteins
                                                                                       /translation="MEYSTLFLKVTGENVNEIDFTIINQNGHNPLVKTNFTIEYNKFFFPRLSWPVNLEVESDMFCTSFSNNFFKYTSVLYGFDTMSVKGEFPYGFSGDNNNYKN NICFERTPQATYINFTERNYDDYKTFNVFELKTKKKKKKLKKKKLKSKYYFFLNINFINNFIIIIAYEFSPIKVESYNLLTVSPTKFLLTINISSSVGINAVQFLSTVSKSSYEFINGFIITIAYEFSPIKVESYNLLTVSPTKFLLTINISSSVGINAVQFLSTVSKSYEFLLTSGKYNGTYQAVIDVYNTPSFRDENGNWLRLYDGSIVSSDPIVYFKLPSIPSMYKI
                                                                                  MSCKGDHLVCK&NYLTCKVNISEGTPFHVHDSSLQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               join(448. .1081,1189. .3926)
/note="orf1; similar to CelA, encoded by GenBank Accession
Number M33861, and CelB, encoded by GenBank Accession
Number M33862; contains TETP repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="orf1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental
/product="unknown"
evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAB54082.1"
/db_xref="GI:2081632"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Dictyostelium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          xref="taxon:44689"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _type="amoeba"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7264-7269 (1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        discoideum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat"
```

```
WPCOMMENT
                                                                                                                   RESULT 26
AC116957_(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-081-935-4 (1-194) x DDU20608 (1-4675)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
Sequence split into 4
Fragment Name
AC116957_0
AC116957_1
AC116957_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.:
                                                                                                                                                                                                                                                   2826
                                                                                                                                                                                                                                                                                                                           2766
                                                                                                                                                                                                                                                                                                                                                                                                    2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2646
                                                                                                                                                                            2886
                                                                                                                                                                                                                                                                                     149
                                                                                                                                                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                              166
                                                                                                                                                                                                                                                                                                                                                               129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                            CCAACACCAACACCAAACCCAGGT---AATTGTAATGTTAGTGTT 2927
                                                                                                                                                                                                  ProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVal 180
                                                                                                                                                                                                                                                                                                                                                 ProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyVal 148
                                                                                                                                                                                                                                                                                                                                                                                                                              CCAACTGAAACTCCAACTCAAACACCAACTCAAACACCAACTGAAACTCCAACCCAAACT 2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProIleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGlu 108
                                                                                                                                                                                                                                                   CCAACTGAAACTCCAACTCCAACTCCAACTGAAACTCCAACCCAAACCCCAACACACAAACA
                                                                                                                                                                                                                                                                                     ProThrGlyThrGlySerPheThrValThrGlyArgProThr-----AlaSerThr
                                                                                                                                                                                                                                                                                                                         CCAACTGAAACTCCAACTGAAACTCCAACTGAAACTCCAACTCCAACTCCAACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                      CCAACTGAAACTCCAACTGAAACTCCAACTGAAACTCCAACTGAAACTCCAACTGAAACT 2769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3529.
746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="similar to spore germination-specific proteins SwissProt Accession Numbers P22698 and P22699; also similar to CelA, encoded by GenBank Accession Number M33861, and CelB, encoded by GenBank Accession Number M33862; contains TETP repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="mtrdqdfyniaylendeiprdlpfslisldpvtysyltsvrlin
Nimypftfdptinkftskfyipantafdkisfaligglstefyysgftinnspafdne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGDKYNGTYQAVIDVYNTPSFRDENGNWLRLYDGSIVSSDPIVYFKLPSIPSMYKILK
NL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPLFSEFYKVNENTTYSSLGYPKTSGWRFRITDKYNGFRNGFIKAMGSVDSTIIKLNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NFMSCKGDHLVCKSNYLTCKVNISEGTPFHVHDSSLQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAB54080.1"
/db_xref="GI:676859"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/product="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.747
164.00
45.26%
42.11%
16.03%
                                                       Begin
                                                                             fragments
       100001
       LOCUS
End
110000
210000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                               AC116957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1714 t
                                                                               Accession AC116957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4675
40
3
48
48
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       proteins:
                                                                                                                                                                                                                                                                                       165
                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
MEDLINE
PUBMED
REMARK
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC116957_3
s AC116957
                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium.

1 (bases 1 to 405682)
Gloeckner,G., Eichinger,L., Szafranski,K., Pachebat,J., Dear,P.,
Lehmann,R., Baumgart,C., Parra,G., April,J.F., Guigo,R., Kumpf,K.,
Tunggal,B., Cox,E., Quail,M.A., Platzer,M., Rosenthal,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dictyostelium discoideum chromosome
AX4, complete sequence.
AC116957 AC116962
AC116957.2 GI:28829949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (12-MAR-2003) Genome Analysis, Institute of Molecular Biotechnology, Beutenberstr. 11, Jena 07745, Germany On or before Mar 4, 2003 this sequence version replaced gi:20066269, gi:19920061, gi:19919989.

CDS predictions from GeneID do not necessarily reflect true gene Further Information is available from IMB Jena, Department of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Analysis
(http://genome.imb-jena.de/dictyostelium/)
intrp://genome.imb-jena.de/dictyostelium/)
and the Univerity Colonge, Institute for Biochemistry
(http://www.uni-koeln.de/dictyostelium/project.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (04-MAR-2003) Genome Analysis, Institute of Biotechnology, Beutenberstr. 11, Jena 07745, Germany 4 (bases 1 to 405682)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biotechnology, Beutenberstr.
3 (bases 1 to 405682)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (04-APR-2002) Genome Analysis, Institute Biotechnology, Beutenberstr. 11, Jena 07745, Germar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 405682)
Baumgart, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence and analysis of chromosome 2 of Dictyostelium discoideum Nature 418 (6893), 79-85 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Baumgart, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Baumgart,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Agency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The Dictyostelium Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2097910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Deutsche Forschungsgemeinschaft (DFG) Location/Qualifiers
                                                                                                                                                                                                                          /map="1685067-2090751"
complement (join(644. 776,858. .1605,1712. .1880))
/note="GeneID exon scores (in order of location ranges):
10.65, 75.03, 18.74 - GSCJ_ID dd_03093"
/codon_start=1
/product="ginilar to Arabidopsis thaliana (Mouse-ear Cress). Putative Choline kinase"
/protein_id="AAO52440.1"
/db_xref="GI:28829950"
                                                                                                                                                  /tränslation="MMAKTKGSYEVPHYTVTKOKVNKGLCDIARYFVPEYRNSKDEDL
TIQKLNGGITNVLYLVEDKNIEDGKYRYLPVVIRLYGYKSEEIIDRKNELIIQTEADQN
GLAAKFYGLEDUGCIYGFIKGEPLAVEDISKPTMQTCIAKEIAOMHSIEMPTRKNPSL
MPTIKKMAALAPDVYPVPEKNEYYQSINVKKMIEEGKMLEQRLAQLNSPIVFCHNDLL
                                                                                                               SGNIIYDPSQNCASFIDFEYANYNFRGLELGNHFNEYAGFGPDYSLYPNKESQIHFLT
DYHRSLFKTEPTQDELEKLYIESNQFSLASHLYWGFWAIVQAWNSQIDFDYLEYGKAR
/codon_start=1
/product="similar to Dictyostelium
                                     133.16, 0.23 -
                                                         join(3721. .5364,54/note="GeneID exon
                                                                                             FDRYYETRDQFLNLN"
                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:44689"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Dictyostelium"

mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .405682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100001
                                                                           .5364,5457.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   405682
405682 bp
                                   GSCJ_ID dd_03097"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  discoideum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A linear INV 12
map 1685067-2090751
                                                         order
                                                         of.
                                                         location ranges):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INV 12-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of of
```

В ફ 밁 Ş 밁 ઇ 밁 á В Ş

Sg

```
/product="hypothetical protein"
/protein_id="AAO52443.1"
/protein_id="AAO52443.1"
/db_xref="GI:28829953"
/translation="messifysylinnyDcGnndeeflnCLLILSINNLNITFNELLNY
/translation="messifysylinnyDcGnndeeflnCLLILSINNLNITFNELLNY
CYNNNLKRKTLLNYFKAVKLIIEDNNGEIGFTPLTNRFYPLPYGVERVEVDCSSITIG
DHWIPDTCKSIYFHNFNQQKLNRNIISNSLTIIFFGNSFNQPLSDSNGLPWLPKKLKT
LSLGQSFQQTIQRNELPQSLTELFLDSEYQGIILNESIFKJUTYLYEFFTIRKHHFD
TKSISKGVTSLKIGCYENQTIKKOMIFNUTYSLEIDNISKIEIEPNSLPLSIKTLRIG
SIELDSDNILPPNIKKLSIYGDYHSCFLPKSIESIKITSFFNLSKISFNHFNLTSLK
IEKLSDSVLEEGVFPNTLLRIYLSCPNLKLSNGIFPNSLKKLKLKEFNHPIANGDLPS
SIEVLKLPNYDYPIKNGDLPSSLNVLKQDHCISTIQROALPPNLKKLFYFHGRELRKL
PNI TODTG DESTAUTICTEN DETWENTET U"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ILFHLRIYNHHHSI"

join(13144. .14052,15655. .15768)

note="GeneID exon scores (in order of location ranges):

16.56, 7.78 - GSCJ_ID dd_00940"
                                                                                                                                   /translation="mdniiysylinnynnknneeqeeeekkhlndlkglndqqfqtln
NHIQNLKNTFTTNNSNDEVIYNHSITDNNNNSNDTINNRNKRIAFDCSILIIIKNNLN
HHITIKNNDNSNNLNGLILKPQPDLNNKIRTNQQIDQTIDNNYKLFKKVWGNIFIRDQ
                                                                                                                                                                                                                        /product="hypothetical protein"
/protein_id="AAO52444.1"
/db_xref="GI:28829954"
                                                                                                                                                                                                                                                                                                                                  join(12253. .12311,12539. .13007)
/note="GeneID exon scores (in order of location ranges):
-5.63, 15.15 - GSCJ_ID dd_00941"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MSNLKLSNNNNGNQKESSSFFQKVMKSPSTQNLLNSPSSNNSNN
NLSNSGSNEVKDTTTNSPSQLPPNYTPPPPPHQIRNSSSIEGGEFSLLNNENSNNNN
NNNNNNNNNNNNNNNNNNNHOLARTESSVSIISSSSGSNSGQPNLQRHSSNIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mold). Kinase responsive 
/protein_id="AAO52442.1" 
/db_xref="GI:28829952"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LPSNSDLŁCYSI IMLILKSKFNLFDROYNFNNSSGSNYMNNNTILNDNNNNNNNEI
NNEYD INNI DKNYNKENS I ERLEFLKKLI NNHFNSENSENSERLITEDHIKKYDSLSE
ENWLYGYI YNLFKNEFLSKODTWSLNI ODFKGI FKLKPSSI RRLITEDHIKKYDSLSE
ENWLYGYI YNLFKNEFLSKODTWSLNI ODFKGI FKLKPSSI RRLITODHIKKYDSLSE
KYQNLMNNNNNNNNNNNNNNNNN I CNAI INNI I KDDEGTLNEKI I LKYKKSTTKYSTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EEFENGGGYKTGSYKRVWTQEVLDAMNOKKLRQKDNRYYILQNLLKIQVTSLIKDHGY
NEQLYQVTGELWFKLLDKFSQDFEGSSSTTSSSSSTTSTFGIINYPPPPITLSICYLA
CVYLREPVIISDFISLAQSGKIASFTNETTWSFSWSNSNSTFINFARISDDICKYLNF
LPSSNIPLLLLRFCTELKLPKSILNLSNQLYNLILIPFKLFRKKSPNSTLSKIYENIL
                                                                                                                                                                                                                                                                                                                                                                                                               PNLIWPTSFEFAYISEASFNFINSIDLDFFTNHIRLK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GKRIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SKSKKSSLSSSSSSSSSSADPTILLPKVRNIRNAKSINRSGRTNLFPPSQKSVFSKGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6218.
                                                                                                                                                                                                                                                                                                           codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="similar to Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'codon_start=1
'product'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            356.10 - GSCJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="GeneID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mold). Inositol 5-phosphatase
/protein_id="AAO52441.1"
/db_xref="GI:28829951"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     translation="MGGNKQHHQACIQCAGVRFSKDEFGFLECDNCHTRVEGYFTQEV/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .9748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon scores (in ID dd_03095"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to stress 1-like kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   order of location ranges):
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   discoideum (Slime
                                                   Ş
                                                                                                      8
                                                                                                                                                       Ś
                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-4 (1-194) x AC116957_0 (1-110000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                         48920
                                                                                                                                                                                                                                                                                                                            48800
                                                                                                                                                                                                                48860
                                                                                                                                                            95
                                                                                                                                                                                                                                                                      39
                                                      70
                                                                                                                                                                                                                                                                                                                                                                               22
                                                                                                                                                                                                                                                                                                              GATGITICCAGITATTACAGGITCTGATAGAAITTICTACATTAGGIGGIGATTTATGGITA 48859
                                                                                                                                                                                                       ACAGGTAAAGGATTTAAATCAGTTACTGGTGCAACATTCAATTATAAATCAACTACTAAA 48919
                                                                                                                                                                                                                                                                                                                                                                    AspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAsp-----
                                                                                                CCATTACAAGTTAAAAAAACTGTTGGGGGGTGCTGCTATTTTATTAGGCGGTATCTCTGAA 48979
                                                                                                                                                       ProGlyGlnIleThrProCysValGluGluAlaCysProLeu-------
                                                                                                                                                                                                                                                          ------GlyCysThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeu 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/product="hypothetical protein"
/protein_id="AAO52448.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MDSI1YfYLINNYNNKNNEELLNCLLILSINNLNITFNQVQDYC
NSINNYKNNYQNLQKKKENKLQEEEEETHLNDLKGLNDQQFQTLNNHIQNLKYTFITN
NSNDETIYTHSITDNNNNDTIDNRNKRIAFDCSILIIRXNNLNHHITINNKNINKNINNNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
join(21335. .21528,21616. .21928)
/note="GeneID exon scores (in orc
-5.52, 10.92 - GSCJ_ID dd_00435"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.11, 70.39 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EFSPTIIKLTLTVL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MTQLTKRNKRIAFDCSILIIIKNNLNHHITIKNNLNHHITINNSNN KCNNLNQVVILKLIOINKFGEIYLSGIKFYFILEYIIIRIIYGIDIGGHNISTYKYRN YFNNSNISNDSENNHQQNISNCCPMPSTAEKIEMNCSDIIIVDHWIPDTCKSIKFTY FDQDLTRNIIGNSLTSINFSNEFNOSLSDTKGEPWLPRTLKSLTFGKSFPHSIHRDEM PPSLTTLIFIPVYKGVIQYGSIPKSVTTLHYSLFFKHDIYKEDLTSVPGGTTSLEFD FYYNGTIEKGMIPHYVTSLKFRMGDYKLEPNSLPISKTLGLGRNRTIFTQKVFPPTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MRCSDIILVDHWIPDTCKSIIFSHFNQQLTRNIIGNSLTSIDFGKDFNQSLSDKNGIPWLPRTLKSLTFGKSFQHSIHRDEIPPSLTSLILDPKYKGVLEYGSIRKVUTLHYYFDSKGAKLDSTSIPGGTTSLEFDSFFDQTIEKGMISHNUTSLKFFFCNSIIKNSLFDISIKILPKTIQKLKIMDFSRDYFQAITMLSVYTFSDIKILPKTIQKLKIMDFSRPSQLDHHYFYFLKNLTSLNFPAKQVDLTNVKFPNIISRLTLAVSDYLEFNDCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (22154. .22339)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/product="hypothetical protein"
/protein_id="AAO52447.1"
/db_xref="GI:28829957"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="hypothetical_protein"
/product="hypothetical_protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="GeneID exon scores (in order of location ranges):
0.40 - GSCJ_ID dd_00433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         join(18782. .18911,19094. .20841)
/note="GeneID exon scores (in order of location ranges):
/....70.39 - GSCJ_ID dd_00420"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TNLSIVTFSDIGILPKTIEKLKIIGSNNFTQLDSHSFHIFENLKSLELNAIGVDLTGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pseudo/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/product="hypohetical protein"
/protein_id="AAO52446.1"
/db_xref="GI:28829956"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        join(15826. .16011,16072. .17106)
/note="GeneID exon scores (in order of location ranges):
/192, 31.02 - GSCJ_ID dd_00422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LQNNFKKLKLFNFNQPLNVGDLPSSIEGCPAVRAIRANGLIQALLSDHGLDVNNLNIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="AAO52445.
/db_xref="GI:28829955"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14.8
163.50
37.71%
30.86%
15.98%
```

.21528,21616. .21928) D exon scores (in order

of location ranges):

Length: Matches:

110000

Indels: Conservative: Mismatches:

54 12 82 4

AspAlaArgIleSerValSer 76

69

CDS

Sg

CDS

ş

밁

á

В

ş

밁 á В á

밁

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 27
AC119773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOCOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
RS Milany, D. Marie, Metzker, M.Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Allen, C., Allen, H., Barnstead, M., Beden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Berahmed, F., Blyship, P., Brown, M., Bliswalo, K., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, N., Bubay, C., Burch, P., Burrell, K., Calderon, E., Cardenas, V., Carter, K., Cavazos, I., Ceasar, H., Center, A., Chen, Z., Chu, J., Chacke, J., Charler, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Clasca, J., Charler, R., Carcia, R., Chen, Y., Chen, Z., Chu, J., Chacke, J., Chen, Z., Chu, J., Chacke, J., Coker, P., Chen, Z., Chu, J., Chen, Z., Chu, J., Charler, R., Carcia, M., Cree, A., D'Souza, L., Davis, R., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Draper, H., Digga-Rocha, S., Dunh, A., Durbin, K., Duval, B., Eaves, K., Draper, H., Digga-Rocha, S., Dunh, A., Durbin, K., Duval, B., Eaves, K., Pernandez, S., Finley, M., Flagg, N., Forbes, L., Foster, M., Foster, P., Fraser, C.M., Ganta, R., Garcia, A., Garner, T., Garza, M., Guerra, W., Harvey, Y., Havlak, P., Hawes, A., Henderson, N., Hernandez, J., Johnson, R., Jolivet, A., Karpathy, S., Kally, S., Khan, Z., King, L., Kovar, C., Kowis, C., Kraft, C.L., Lebow, H., Levan, J., Idebird, D., Jackson, A., Harvey, S., McLeod, M.P., Loudon, P., Longacre, S., Lopez, J., Liu, J., L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48980 ATGGATCAAGGTAGTAACTTTAGTATTATATTAGAAAATGATAAATCAATATCTTCAAAT 49039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  49160 ACACCAACTCAAACACCAACTCAAACTCCAACTGAAACACCAACTCAAACTCCAACTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49040 GAATATTTATTTATCCATATCAAAAAGTATTATTATTTÄTTCCAGATCCACCAACCCCA 49099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             116 GluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGlu 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC119773 222896 bp DNA Rattus norvegicus clone CH230-150P22, ***
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ENRICHED Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC119773.6 GI:25095179
HTG; HTGS_PHASE1; HTGS_I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluproThrAlaValproThrGlyThrGlyGlyGlyValproThrGlyThrGlySerPhe 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACACCAACCGAAACACCAACT---GAAACACCAACTGAAACACCA 49321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACACCAACTCAAACTCCAACTGAAACACCAACCCAAACACCAACCGAAACACCAACTCAA 49279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTCANACACCAACACCAACTGAAACACCAACTGAAACACCAACTCAAACTCAA 49159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Thr.---ThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGlu 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AsnIleValValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ThrValThrGlyArgProThrAlaSerThrProAlaGluPhePro 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear HTG 19-NOV-2002
SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49219
```

```
Submitted (19-NOV-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Nov 19, 2002 this sequence version replaced gi:22856367. On Nov 19, 2002 this sequence version replaced gi:22856367 and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sanders, W., Savery, G., Scherer, S., Scott, G., Shatsman, S., Shen, H., Shetty, J., Shvartsbeyn, A., Sisson, I., Sitter, C.D., Smajs, D., Sneed, A., Sodergren, E., Song, X.-Z., Sorelle, R., Sosa, J., Steimle, M., Sctong, R., Sutton, A., Svatek, A., Tabor, P., Taylor, C., Taylor, T., Thomas, N., Thomas, S., Tingey, A., Trejos, Z., Usmani, K., Valasana, D., Waldron, L., Walker, B., Wang, J., Wallasana, D., Warren, R., Wei, X., White, F., Williams, G., Willson, R., Warren, R., Wei, X., White, F., Williams, G., Willson, R., Waldron, L., Wooden, H., Worley, K., Wright, D., Wright, R., Wu, J., Yakub, S., Yen, J., Yoon, V., Yu, F., Zhang, J., Zhou, J., Zhou, X., Zhao, S., Dunn, D., Yon, Niederhausern, A., Weiss, R., Smith, D.R., Holt, R.A., Smith, H.O., Weinstock, G. and Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (02-MAY-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 (bases 1 to 222896)
Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
shotgun sequence only contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 222896)
```

REFERENCE AUTHORS TITLE

JOURNAL

COMMENT

TITLE JOURNAL REFERENCE AUTHORS

TITLE JOURNAL

* NOTE: Estimated insert size may differ from sequence length

(see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html)

*NOTE: This is a 'working draft' sequence. It currently

*Consists of 7 contigs. The true order of the pieces

* is not known and their order in this sequence record is

* arbitrary. Gaps between the contigs are represented as

* runs of N, but the exact sizes of the gaps are unknown.

* This record will be updated with the finished sequence be preserved as soon as it is available and the accession number will Center project name: GVPS

Center clone name: CH210-150P22

Center clone name: CH2210-150P22

Center clone name: CH210-150P22

Assembly program: Phrap; version 0.990329

Consensus quality: 202212 bases at least Q40

Consensus quality: 206295 bases at least Q20

Consensus quality: 208897 bases at least Q20

Estimated insert size: 209030; sum-of-contigs estimation quality coverage: 6x in Q20 bases; sum-of-contigs estimation 130231 130331 150794 150894 217181 217281 Center: Baylor College of Medicine Center code: BCM Web site: http://www.hgsc.bcm.tmc.edu/ Contact: hgsc-help@bcm.tmc.edu ----- Genome Center 130230: contig of 130230 bp in length 130330: gap of unknown length 150793: contig of 20463 bp in length 150893: gap of unknown length 217180: contig of 66287 bp in length 217280: gap of unknown length 217280: gap of unknown length 218456: contig of 1176 bp in length 218556: gap of unknown length Project Information

```
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similari
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-4 (1-194) x AC119773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE CCUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                   POCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                        DDU20661
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                   ORGANISM
                                                                                                                        TITLE
                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity:
Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
0
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73
                                                                                   Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium.

1 (bases 1 to 4284)
Giorda,R., Ohmachi,T., Shaw,D.R. and Ennis,H.L.

A shared internal threonine-glutamic acid-threonine-proline defines a family of Dictyostelium discoideum spore germinati
                                                                                                                                                                                                                                                                                                                         complete
U20661
                                                                                                                                                                                                                      Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                      Dictyostelium
                       91002566
                                            Biochemistry 29 (31),
                                                                         specific proteins
                                                                                                                                                                                                                                              Dictyostelium discoideum
                                                                                                                                                                                                                                                                                               U20661.1 GI:684937
                                                                                                                                                                                                                                                                                                                                                                                                   DDU20661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThr 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTTCAGCCTCTCCATCAGCCTCTCCTTCAGCCTCAGCCTCGCCCTCAGCCTCT 50281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTCCCTCAGTCTCCTTCAGCCTCTCCTTGGTGCTGTGGAATTGTTGGCATC 50512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlySerAsnValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeu 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCATCAGCCTCTCCCTCAGCCTCTCAGCCTCTCCATCAGCCTCTCCTTCAGCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGlu 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTCAGCCTCTCCAGCCCCTCCTTCAGCCCCTCCTTCAGCCCCTCCATCAGCCTCT 50221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IleSerValSerAsnIleValValAspGlnCysSerLysAlaGlyValProIleAspIle 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTCAGCCCCTCCTTCAGCCCCTCCTTCAGCCTCTCCTTCAGCCCTCCTTCAGCCTCT 50161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATCAGCCTCTCCAGCTCCTCCTTCAGCCCCTCCTTCAGCCTCTCCATCAGCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGlu 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             218557
219780
219880
219886
221386
221486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                557 219779: contig of 1223 by

1980 219879: gap of unknown 1,

1980 221385: contig of 1506 by

1986 221485: gap of unknown 1,

1986 222896: contig of 1411 by

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="wgs_contig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Rattus norvegicus"
/mol_type="genomic DNA"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="CH230-150P22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32.5
162.50
44.93%
27.54%
15.88%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .222896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .3056
                                                                                                                                                                                                                                                                                                                                              discoideum unknown internal repeat protein gene, and unknown orfl, orf2 and orf3 genes, partial c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50889 g
                                               7264-7269 (1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (1-222896)
                                                                                                                                                                                                                                                                                                                                                                                             4284 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56791 t
                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in length
                                                                                                                                                                                                                                                                                                                                      orf3 genes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    222896
38
24
75
                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    others
                                                                                        germination
                                                                                                                                                                                                                                                                                                                                                                                           INV 13-MAY-1997
                                                                                                                                                                                                                                                                                                                                            partial cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                            intron
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 (bases 1
Giorda, R.,
     /product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unknown"
/product="unk
```

```
Submitted (06-FEB-1995) Herbert L. Ennis, Roche Institute of Molecular Biology, 340 Kingsland Street, Nutley, NJ 07110, U. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 4284)
orda,R., Ohmachi,T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note-"internal repeat protein; putative spore germination specific protein; similar to CelA, encoded by GenBank Accession Number M33861, and CelB, encoded by GenBank Accession Number M33862; contains TETP repeat"
                                                                                                                                                                                                                                                                                    /protein_id="AAB54076.1"
/db_xref="GI:684938"
/db_xref="GI:684938"
/translation="NSLFTEILNLCFOTEPSKRIKSHOLIKHPFFNDENEOFYNDNKE
/translation="NSLFTEILNLCFOTEPSKRIKSHOLIKHPFFNDENEOFYNDNKE
YFDFLKENERDSYIETHNTESIGSNSTCSINEIRFENLYLLOSTYENOYPIKFITLHE
KYTGISKLSHLNSKFKIIYLFLILLFLMTILVNLNRHVQTKFSIIQRDNIFLSITPES
KYTGISKLSHLNSKFKIIYLFLILLFLMTILVNLNRHVQTKFSIIQRDNIFLSITPES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                join(~1...1250,1733...3117)
/note="orf3; similar to CelA, encoded by GenBank Accession Number M33861, and CelB, encoded by GenBank Accession Number M33862; contains TETP repeat"
/codon_start=2
/evidence=not_experimental
                                                                                                                                                                                                                     NYSSNSNDLQPTDSSTTDPPVTDPPITDPPITDPPVTDPPITEPPVTETPKPTINPFF
NTPVFICSQKIDQCLTVLNSQDLEFIDKKGRDQSMVLEYDGNAEQTFSIREKGGMYIC
LSGEHYHFSEKLKGRLNANKDGRDCTFNLITQFNIDKQANLYSFRSPNDQYIQSDETT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/evidence=not_experimental
                                                                                                                                                                                                RFISTKPGGLGSQSQFFIYFSHSLGPNLD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EEFFGRKSLGSEEAFRLEDAF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="unknown"
/protein_id="AAB54079.1"
/db_xref="GI:2081630"
                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="orf1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:44689"
/clone="270-P"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /strain="Ax3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Dictyostelium/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . .4284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 type="amoeba"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shaw, D.R. and Ennis, H.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          discoideum"
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                      RESULT 29
AC095211/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-4 (1-194) x DDU20661 (1-4284)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                              무
                                                                                                       SOURCE
                                                                                                                                                                         DEFINITION
                                                                                                                                                                                        rocus
                                                                                                                    KEYWORDS
                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region repeat_region CDS
                                                                                                                                                                                                                                                               2569
                                                                                                                                                                                                                                                                                                                                  2512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2332 ACTGAAACAGAAACACCAACTCCAACTGAAACGCCAACTCCAACTGAAACGCCCAACTCCA
                                                                                                                                                                                                                                                                                               168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95
                                                                                                                         Rattus norvegicus clone CH230-9E3, AC095211 AC095211 AC095211 AC095211.4 GI:22773101
                                              HTG; HTGS_PHASE2; HTGS_DRAFT; HTGS_ENRICHED.
Rattus norvegicus (Norway rat)
Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
Muzny, D.Marie.,
                                 Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuAspAlaArgIleSerValSerAsnIleValValAspGlnCysSerLys------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGAATTAAATCAAACATCAAGTTCTTCAATATCTGAATTTTCTGAATCTTTGCAACCA 2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProGluLeu-----ProGlyGlnIleThrProCysValGluGluAlaCysPro 68
                                                                                                                                                                                                                                                                                                                                                                                                                              GluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGly 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTGAAACGCCAACTCCAACTGAAACACCAACTGAAACACCAACTGAAACACCCAACTGAA 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValAspThr----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTTCTGAATCTTCACAAAACCCTTCGTCAACTCCTGAAGAATCACCAACACCAACTCCA 2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGGAATCTTCTGAAAATTCTCAATCATTGACATCTTCTGAATCTTCGCAATCATTGGGA 2271
                                                                                                                                                                                                                                                               GAAACCCCA
                                                                                                                                                                                                                                                                                               GluPhePro 170
                                                                                                                                                                                                                                                                                                                                    ACACCAACGGAAACTCCAACAGAAACCCCCAACAGAAACCCCCAACA ---GAAACCCCCAACA 256
                                                                                                                                                                                                                                                                                                                                                                   ValProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrProAla 167
                                                                                                                                                                                                                                                                                                                                                                                                        ACACCAACACCAACACCGACTGAAACCCCAACTGAAACACCAACTGAAACAACAACGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----ThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAla 127
              (bases 1 to 252801)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="orf2"
/codon_start=1
/evidence=not_experimental
/product="unknown"
/protein_id="AAB54077.1"
/db_xref="G1:684939"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="mynkefkkiinqicnlykllnqdddgfdkeyqqddfddliqsfn
SLFSSKLNNQNNDHNENHNAQDDNNNSRKKIIASFFKLKNGHESLSKNLDKLAELSNR
IGLKLFYGTLQCTIDYNEKEKMYNGDFNEYIHKYYDTCEFDNMIEDDIQHLFSDDNNN
NNNNEDEDEDDLDNYNNSEKLMDSMKINSELYQIYPKLSYKTIKESSIGNKNKIDKIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.901
162.00
43.36%
34.27%
15.84%
                                                                                                                                                                                                                                                               2577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              615 c
Metzker, M. Lee.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            432 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -AlaGlyValProlleAspIlePro-----Pro 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -ThrAlaAlaProGluProSerGluThrAlaGluPro 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
Abramzon, S.,
                                                                                                                                                                       linear HTG 03-OCT-2002 SEQUENCING IN PROGRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4284
49
13
55
26
Adams, C., Alder, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2391
                                                                                                                                                                                                                                                                                                                                                                                                          2511
```

```
Allen, C., Allen, H., Alsbrooks, S., Main, A., Anguiano, D.,
Bayalobesii, W., Bastari, B., Barbor, M., Barnets, Badom, H.,
Bayalobesii, W., Bastari, B., Barbor, M., Barnets, Badom, B.,
Bayalobesii, W., Bartari, B., Barbor, M., Barnets, B., M.,
Bayalobesii, W., Bartari, B., Barbor, M., Barnets, M.M., Benshmed, F.,
Bayalo, M., Balari, B., Barbor, B., Barnets, M., Benshmed, F.,
Bayalo, M., Barby, C., Barch, B., Burcell, K., Colege, D., Chen, Y., Wang, Y., Martin, X., Martin, X., Martin, Y., ```

REFERENCE AUTHORS TITLE

JOURNAL

COMMENT

JOURNAL REFERENCE AUTHORS TITLE JOURNAL

TITLE

```
Best I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-4 (1-194) x AC095211 (1-252801)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                 185359
                                                                                                                                                                                                                                                                              185419
                                                                                                                                                                                                                                                                                                                                                       185479
                                                                                                                                                                                                                                                                                                                                                                                                                                    185533
                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                              71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank draft data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.
                                                                                                               ProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyVal
                                                                                                                                                                                         ProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGlu 128
                                                                                                                                                                                                                                                                      ProlleAsplleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGlu 108
                                                                                                                                                                                                                                                                                                                                                 AlaArgIleSerValSerAsnIleValValAspGlnCysSerLys-----AlaGlyVal
                                                                                                                                                                                                                                                                                                                                                                                                                            SerLysProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysProLeuAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       by the finished sequence as soon as it is available and the accession number will be preserved.

1 252801: contig of 252801 bp in length.
-----ProAlaGluPheProGlyAlaGlySerAsnValArg 177
                                    ProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThr-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center project name: GDHZ
Center clone name: CH230-9E3
------ Summary Statistics
Assembly program: Phrap; version 0.990329
Consensus quality: 222989 bases at least Q40
Consensus quality: 225848 bases at least Q30
Consensus quality: 227800 bases at least Q20
Estimated insert size: 241532; sum-of-contigs estimation
Quality coverage: 4x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Web site: http://www.hgsc.bcm.tmc.edu/Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="wgs_contig"
251753. .252801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="wgs_contig"
49651 c 49432 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Rattus norvegicus"

mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="CH230-9E3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . .1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41.8
161.50
44.85%
32.35%
15.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 252801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66454 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23733 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                252801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE012556/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 30
                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                           gene
                                                                                                                                                    Sg
                                                                                                                                                                                                                                                                                                                                             source
```

B ş 밁 Ś 밁 á 밁 ક 밁 á 밁 á

```
185179 CCGACCAACTAACCGAAAAAACCTCTGGGTTCTGGCACTGAACTTAGA 185132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CE 1 (bases 1 to 300029)

Wan Sluys, M.A., de Oliveira, M.C., Monteiro-Vitorello, C.B., Miyaki, C.Y., Furlan, L.R., Camargo, L.E.A., da Silva, A.C.R., Moon, D.H., Takita, M.A., Lemos, E.G.M., Machado, M.A., Ferro, M.I.T., da Silva, F.R., Goldman, M.H.S., Goldman, G.H., Lemos, M.V.F., Sali, S.M., Carrer, H., Carraro, D.M., de Oliveira, R.C., Promes, L.R., Siqueira, W.J., Coutinho, L.L., Kimura, E.T., Ferro, E.S., Harakava, R., Kuramae, E.E., Marino, C.L., Giglioti, E., Abreu, I.L., Alves, L.M.C., do Amaral, A.M., Baia, G.S., Blanco, S.R., Brito, M.S., Cannavan, F.S., Celestino, A.V., da Cunha, A.F., Fenille, R.C., Ferro, J.A., Formighieri, E.F., Kishi, L.T., Leoni, S.G., Oliveira, A.R., Rosa JT., V.E., Sassaki, F.T., Sena, J.A.D., de Souza, A.A., Truffi, D., Tsukumo, F., Yanai, G.M., Zaros, L.G., Kiraina, T.P., Simpson, A.J.G., Almeida Jr., N.F., Setubal, J.C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wan Sluys, M.A., de Oliveira, M.C., Monteiro-Vitorello, C.B., Wiyaki, C.Y., Furlan, L.R., Camargo, L.E.A., da Silva, A.C.R., Miyaki, C.Y., Furlan, L.R., Camargo, L.E.A., da Silva, A.C.R., Moon, D.H., Takita, M.A., Lemos, E.G.M., Machado, M.A., Ferro, M.I.T., da Silva, F.R., Goldman, M.H.S., Goldman, G.H., Lemos, M.V.F., Lemos, M.V.F., Lemos, M.V.F., Carracy, D.M., de Uliveira, R.C., Nunes, L.R., Siqueira, M.J., Coutinho, L.L., Kimura, E.T., Ferro, E.S., Harakava, R., Kuramae, E.E., Marino, C.L., Giglioti, E., Abreu, I.L., Alves, L.M.C., do Amaral, A.M., Baia, G.S., Blanco, S.R., Brito, M.S., Cannavan, F.S., Celestino, A.V., da Cunha, A.F., Fenille, R.C., Ferro, J.A., Formighieri, E.F., Kishi, L.T., Leoni, S.G., Oliveira, A.R., Rosa Jr., V.E., Sassaki, F.T., Sena, J.A.D., de Souza, A.A., Truffi, D., Tsukumo, F., Yanai, G.M., Zaros, L.G., Civerolo, E.L., Simpson, A.J.G., Almeida Jr., N.F., Setubal, J.C. and Kitajima, J.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genome.
AE012556 AE009442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (17-DEC-2001) Instituto de Biociencias, Universidade Sao Paulo, Rua do Matao, 277, Sao Paulo, SP 05508-900, Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Comparative Analyses of the Complete Genome Sequences of Pierce's Disease and Citrus Variegated Chlorosis Strains of Xylella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fastidiosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kitajima,J.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; Gammaproteobacteria; Xanthomonadales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xylella fastidiosa Temeculal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xylella fastidiosa Temeculai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE012556.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xylella fastidiosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12533478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Xanthomonadaceae; Xylella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AE012556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteriol. 185 (3), 1018-1026 (2003)
/codon_start=1
/transl_table=11
/product="general secretory pathway protein G precursor"
/protein_id="AAO28603.1"
                                                                                                                                              /gene="xpsG"
/locus_tag="pD0734"
/locus_tag="pD0734"
/ocated using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Xylella fastidiosa Temeculal"
/mol_type="genomic DNA"
/strain="Temeculal"
                                                                                                                                                                                                                                                                                                   113. .601
                                                                                                                                                                                                                                                                                                                                  /note="synonym: pefG"
                                                                                                                                                                                                                                                                                                                                                                     'Locus_tag="PD0734"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   db_xref="taxon:183190"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rua do Matao, 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="Pierce's disease strain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:28056730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Temeculal,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300029 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                section
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                similarity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 of 9 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BCT 29-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 iveira,R.C.,
Ferro,E.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                de
```

gene

Sgo

gene

CDS

```
/locus_tag="PD0735"
607. .1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="GI:28056731"
/translation="MRSAFVFPFILRPEVVAMVNRRSITCSPAQMRQAGMSLLEIII
VIVLLIGGVIAFVGSRVLGGADRGKANLVKSQIQTLAGKIENYQLDTGKLPGSLNDLVN
PPGGVSNWLGPYAKAAELNDPWGHPIQYRVPGEGRPFDLMSLGKDGKPGGSSYDADIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="mlpcsapfrfqtssgapvdaqgvsllemllvialialisllgva
vlsggmdgvqlrnsgkqlaaelrytrtvalatgtaqrfmidpqrrrwqgpnghqgklp
galqirfsgaqqlqtssgegviqffddgassggridlemkraywridvgwitgevrsg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/transI_table=11
/product="general secretory pathway protein I precursor"
/protein_id="AAO28605.1"
/db_xref="G1:28056733"
/db_xref="G1:28056733"
/translation="MKCORGYSLLEVIVAFAILALALSLLLGTLTGGTRQVRRADLAS
OATLYAQSFLAQQGVAMPLHVQHQQQGFENGRFRWMLETRPYENSPGSPDGAQLLELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="PD0736"
/note="synonym: pef1
1110. .1508
/transT_table=11
/product="general secretory pathway protein K"
/product="general secretory pathway protein K"
/procein id="AA028607.1"
/db_xref="GI:28056735"
/db_xref="MRRARGAALIVVLMLVMLLAAMIGAFALSARVEHLQGAVLVSSA/translation="MRRARGAALIVVLMLVMLLAAMIGAFALSARVEHLQGAVLVSSA/CTANSlation="MRRARGAALIVVLMLVMLLAAMIGAFALSARVEHLQGAVLVSSA/CTANSlation="MRRARGAALIVVLMLVMLLAAMIGAFALSARVEHLQGAVLVSSA/CTANSlation="MRRARGAALIVVLMLVMLLAAMIGAFALSARVEHLQGAVLVSSA/AGGLVSSAVDLAAGGLVSSAVDLAAAGLAGAIIDWRDTDHLVSPGGAEDSDYAAAGLPYGAKDAKD
                                                                                                                                                                                                                                                                                                                                                                                                                           /trānslation="mrrmagftlmevllatvllasgltlafvtlhsasivsrrseala
srnermavelflrrlmgelberenhvellfvgedprigfvgdyldrgg
pyvhdisvvgsgvohqlrlatmygbdetvkddlsveselladglhevhfsyrgmdqs
rhqlgpwvatwpssdqlpvsvavQIkdDIapwptlvvvllqsnsdggd"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1505.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="xpsJ"
/locus_tag="PD0737"
/note="synonym: pefJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLRTSASL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="general secretory pathway protein
/protein_id="AAO28604.1"
/db_xref="GI:28056732"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /locus_tag="PD0735"
/note="identified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="xpsH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /locus_tag="PD0736"
/note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="identified by sequence similarity; putative; ocated using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene="xpsH"
                                                                                                                                                                                                        /locus_tag="PD0738"
/note="identified by sequence similarity; putative; ORF
/ocated using_Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="general secretory pathway protein J
/protein_id="AAO28606.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1/trans1_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="PD0737"
/note="identified by sequence
/ocated using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1505.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSVRWGDEPDQSLQWRTLRFVRLQPPGDGL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'gene="xpsI"
                                                                                                                                                           /codon_start=:/
/transl_table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'gene="xpsI"
                                                                                                                                                                                                                                                                                           'gene="pefK"
                                                                                                                                                                                                                                                                                                                                             locus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               db_xref="GI:28056734"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="xpsJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .1508
                                                                                                                                                                                                                                                                                                                                                tag="PD0738"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pefI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          similarity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          putative;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                precursor"
                                                                                                                                                                                                                                                                                     Alignment S
Pred. No.:
  밁
                                               Ś
                                                                                                                                                              DB:
                                                                                                                                                                                                                                                            Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
252627 GTCTTGAGTGCCTGTGGTGGTGGATTAGTTCGTATAGATACACCTACACCGACACCCACA 252568
```

gene

Sg

gene

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                           US-10-081-935-4 (1-194) x AE012556
                                                                                                                                                                                                                                                                                                                                                                                                                                  Scores:
79 ValValAspGlnCysSerLysAlaGlyValProfleAspIleProProValAspThrThr 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NPFQSIAELRLVLGMDTDLYRLMLPNITIYSGNLQPEVSYAPVFVLTALGQNVAAVLA
KRQQLSPSDVSKOMGSGTYSIESKVRLAQGREAVLRAVVRMGGGRIPGATYTILHWEE
GIAWQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="Worgyrmamskwmeslrwfgvsiapgvggfwhwwwqsllawlpm
rcrvqmgllserlllsvqadglhlvrqcgdvleplvqlpwpitpqelsgmllpklqiil
prhwlipatsalcrplrlpacasqrlhdvvrfeidrgtpfvgvgyvpllkrhgdd
aqletelvvvprrlvdpgdvpkemattlagidvadmgogpluvnllpvpvgvrcsdp
mrrwhlalaavalllvatagalllninrirvaeqlrlovqagassarrvaaergrlvtl
iegvrflderrtlrpkvievmeelsrrlpngtylekfaiedgolhlmgmsndasslvr
llegsklwrtpslssvlgsnvgssvnrfvitaelvgvpmkeaadgkaor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transT_table=11
/product="general secretory pathway
/protein_id="AAO28608.1"
/protein_id="ABO28608.1"
/db_xref="GI:28056736"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="PD0739"
2949. .4103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2949. .4103
/gene="pefL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transI_table=11
/product="xpsN protein"
/product="xpsN protein"
/protein_id="AAO28610.1"
/protein_id="AAO28610.1"
/db_xref="GI:28056738"
/db_xref="GI:28056738"
/transIation="MRIDAFSVWTWLFATVAGWAALVCMLALAGMGRSVQLLRDDSQL
/transIation="MRIDAFSVWTWLFATVAGWAALVCMLALAGMGRSVQLLRDDSQL
/transIation="MRIDAFSVWTWLFATVAGWAALVCMLALAGMGRSVQLLRDDSQL
/transIation="MRIDAFSVWTWLFATVAGWALVCMLALAGMGRSVQLLRDDSQL
/transIation="MRIDAFSVWTWLFATVAGWAALVCMLALAGMGRSVQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRDDSQLLRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QVLRDRELRIKSQLQQGANLAEQLRRIQVLRSRPGFLPESSVELASAGLVKRLEGVV
NDASPGNRSCAIINRSPLQPDMHDRFVRVAVQVRLRCGTPELALVLYNLESGSPRLFV
NNLNVMAQRVPLSPNESGHGLDVAFELAGFLSPCGDHVPSSLPQRSSNAN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="xpsN"
/locus_tag="PD0741"
4706. _5473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="xpsM"
/locus_tag="PD0740"
4084. .4716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon start=1
/crans1 table=11
/product="general secretion pathway protein"
/protein id="AAO28609.1"
/protein id="AAO28609.1"
/db xref="G1:28056737"
/translation="MARHNVNSDRWLALGLLFIKLSVLYLLLVHPWFTRPMLSVQQQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4084. .4716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /locus_tag="pD0739"
/note="identified by sequence similarity; putative;
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VTGPQAPEKPIDAQIRAIRERIEARRRQLQQQQEQQK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="identified by sequence
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="xpsN"
/locus_tag="PD0741"
/note="identified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4706. .5473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="PD0740"
/note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene="xpsM"
                                                                                                                                                                                                   48.9
161.50
46.24%
41.94%
15.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .7845
                                                                                    (1-300029)
                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     similarity;
                                                                                                                                                                300029
39
4
49
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     putative;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORF
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 31
AF269242/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252387 CCCACACCCACACCCACACCTACACCCACACCTACACCT 252349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               252447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      252567 CCTACACCCACACCGACACCCGACACCCGACACCCACACCCACACCGACACCCGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9435 bp DNA linear INV 11-SEP-20(8230) gene, complete cds.
AF269242
AF269242
AF269242
AF269242.1 GI:10048272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (18-MAR-2000)
University of Medical So
Guangdong 510089, China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 9435)
Shan,Z.X., Yu,X.B., Li,X.R., Ma,C.L., Fang,J.M. and Wu,Z.D.
Structure of the gene for Plasmodium falciparum isolate FCC1/HN
transmission blocking target antigen, Pfs230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium falciparum (malaria parasite P. falciparum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTACACCCACACCCTACACCCCACACCCCACACCCCACACCCTACACCCCACACCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThr 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlyArgProThrAlaSer---ThrProAlaGluPhePro 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCACACCTACACCCACACCCTACACCCTACACCCTACACCCTACACCCTACA 252388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThr 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 9435)
             SPKKKKTVVQKKIKSNIFINSSLKYIIMYLTBSDSFYLVRRRRNLDBEDMSPRDNFY
MDDEEBBEBEBEBEBEBEBEBEBEBEBEBEYDDYVYBESGDETBEQLQEEHQEEVGAES
SESFNDEDEDS VEARDCDMIR VDEYYEDQDGDTYDSTI KNEDVDEDADEEVGEEVGE
EVGEBVGEEVGEEVGEEVGEEVGEEVGEEVGEBEGEFY
DEKERQGEIYPFGDEEKDEGGESTTYEKSEVDKTDLKFIEGGEGDDVYKVDGSKVL
LDDDTIARVSKKHTARDGEYGEYGEAVEDGENVIKIIRSVLQSGALPSVGVDELDKID
LSYETTESGDTAVSEDSYDKYASNNTNKEYVCDFTDQLKFILSSPKVKKCEVKNCEVKNEPL
IKVKIICPLKGSVEKLYNNIEYVFYFICDNSKTEDDNKKGNRGIVEVYVEPYGNKIN
EKENNFKEGVIEFTLPPVVHKATVFYFICDNSKTEDDNKKGNRGIVEVYVEPYGNKIN
EKENNFKEGVIEFTLPEVVHKATVFYFICDNSKTEDDNKKGNRGIVEVYVEPYGNKIN
KKENNFKEGVIEFTLPEVVHKATVFYFICDNSKTEDDNKKGNRGIVEVYVEPYGNKIN
                                                                                                                                                                                                                                                                             LFYYSHNLFKTPETKEKKNKKECFYKNGGIYNLSKEIRMRKDTSVKIKQBTCPFHKEG
SSFEMGPKNITCFYPIVGKKERKTLDTIIIKKNVTNDHVVSSDMHSNVQEKNMILIRN
IDKENKNDIQNVEEKIQRDTYENKDYESDDKLIEMFDDNTNEENFLLTFLKRCLMKIF
LFPKNIKSTTCFEEMI PYNKE I KWNKENKSLGNLVNNSVVYNKEMNAKYFNVQYVH I P
                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="transmission-blocking target antigen Pfs230"
/protein_id="AAG12332.1"
/db_xref="GI:10048273"
                                                                                                                                                                                                                                                                                                                                                              translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNNIKDDEDKRFH/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="s230"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Plasmodium falciparum"
/mol_type="genomic DNA"
/isolate="FCC1/HN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="s230"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               product="transmission-blocking target antigen Pfs230"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'gene="8230"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    country="China"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 9435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _xref="taxon:5833"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . >9435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . >9435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0) Department of Parasitology, Sun Yat-Sen Sciences, 74 Zhongshan Road II, Guangzhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INV 11-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 252448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252508
```

BASE COUNT ORIGIN

QKNVNNKEHDYTCDFTDKLDKTVPSTANGKKLFICKALLKEFDTFTLKCNVNKTOYPN
IEIFFKTLKDKKEVLKLDLDIOYQMFSKF FKFNTOMAKYLNLY PYYLI FFPNHIGKKE
LKNNPTYKHKDVKYFEKSSVLSPLSSADSLCAKLLAVELDYDGTVCLTEKTRYLNLSMN
ELGSDNNTFSVTFOVPFYIDIKEFFYFFFFFFFFFFFFFFFFFFFFFFFFFFFFFHIGKKE
CHNNYTGLASVDTTTILKNAQTYNINKKTTFTELTTHPNEVEVEVEDAEIYLOPEN
CFNNYYKGLASVDITTILKNAQTYNINKKTTFTELKIPPNVLLEDVEISCKCTIEQV
KKIKYI TKNDTVLLKREVQSESTLDDKI YKCEHERFI NRPVNKTFDENVEYTCNIK
ENFENYIOIFFSANDIGIYKNIOMYDIVKFTRVDFFKSKENELHKLI PNSKHLHKT
KEMLILYNEEKVDLLHFYVFLPIYIKDI YEFNIVCDNSKTMWKNQLGGKVIYHITVSK
REQKYKGCS SDNEHAMMES YNKTNVKKGT IDAK PKOLIGFYCPSGTLKLTNCFKDAIV
HTNLTUNINGILLLKANNLAMFTYKHQRYMEIPALMDDISFKCICVDLKKKXPNVKSKF
LGRVKYGCS SDNEHAMMES YNKTNVKKGT IDAK PKOLIGFYCPSGTLKLTNCFKDAIV
HTNLTUNINGILLLKANNLAMFTYKHQRYMEIPALMDDISFKCICVDLKKKXPNVKSKF
DTDAMPES I IESLSINENSGGFPFTYTONDAHLLLESHKRNYLKELFHDLGKKKPA
DTDAMPES I IESLSINENSGGFPFTYTONDAHLLLESHKRNYLKELFHDLGKKKPA
DTDAMPES I IESLSINENSGGFPFTYTONDAHLLLESHKRNYLKELFHDLGKKKPA
DTDAMPES I IESLSINENSGGFPTYTONDAHLLLESHKRNYLKELGVISLI ERR FHNEETL
ESKKENDIGDYVUHNGVUDTGPVLDNSTFEKYFKNIK INFDELGKYELGGN
VNIHCYALLKKOLDFTTYNGTTONDAKLMTSSILTSENDNIKELQVISLI ERR FHNEETL
ESKKENDIGDTVOHNGVUDTGPVLDNSTITASSPLLVMGELQVISLI ERR FHNEETL
ESKKENDIGDTEEEKD
LESSLLNERGINSKKINGCDFTSYAAFVVPDIV PKOLHFRVECKNIETDONNOLIKVI
KEKNEVSISLALKKOYCNRI ETTFDKNGKSCEJNEYKENSLAPSLVFDDNNOLIKVI
KEKNEVSISLALKOYCNRI ETTFDKNGKKOEGISFFI PRI KOPTDLKFI INTIDNSN
IKQRGLIYI FVAKNVSENSFKLCDFTTGSTSLMELNSQVKEKKCTVKIKKGDI FGLKC
PKGFAI FOACFSWYLLEYYKSDYEDSHINYI IHKKYALLDDEEROKKKNOOEEQO
EQGEQGQILKOODDRILSHDDYNKHTTYI LDRINGKYSILTDNSKI INTOKKNOOEEQO
EQGEQGQILKOODDRILSHDOYNKHTTYI LDRINGKYSILTPOKKKNOOEEQO
EQGEQGQILKOODDRILSHDOYNKHTTYI LDRYNYESTITANKXI ITTOKKNOTYYI IDP
TKXTFSLOII YJQSFYOUSLDHLONGKTITANGY ITTOKKYD ITTOKKNOTYI INTOKKNOTYI IN

Alignment Scores:
Pred. No.:
Score:
Score:
161.00
Matches:
Percent Similarity:
48.54\$
Best Local Similarity:
33.98\$
Query Match:
15.74\$
Caps:
DB:
15.74\$
US-10-081-935-4 (1-194) x AF269242 (1-9435)

Oy
57 GlyGlnlleThrProCysValGluGluAlaCysProLeuAspAlaArgIle:

```
AC109525_0/c
WPCOMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence split
Fragment Nam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC109525 0
AC109525 1
AC109525 2
AC109525 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC109525
Cardenas, V., Carter, K., Chen, G., Cardenas, V., Chavez, J., Chavez, J., Chavez, J., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Cleveland, C., Cockrell, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davia, M.L., Davis, C., Davy, Carroll, L., De Anda, C., Dederich, D., Davia, M.L., Davis, C., Davy, Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K., Draper, H., Dugan-Rocha, S., Dunn, A., Durbin, K., Duval, B., Eaves, K., Egan, A., Escotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Fernandez, S., Finley, M., Flagy, N., Fortex, M., Garrar, T., Garza, M., Gebregeorgis, E., Geer, K., Gill, R., Gradia, A., Garner, T., Garza, M., Gebregeorgis, E., Geer, K., Gill, R., Grady, M., Guerra, M., Guevara, W., Gunaratne, P., Haaland, W., Hamilton, C., Hamilton, K., Harvey, Y., Havlak, P., Hawes, A., Henderson, N., Hernandez, J., Hollins, B., Howells, S., Hulyk, S., Khen, Z., King, L., Kovara, C., Karpathy, S., Kelly, S., Kelly, S., Khan, Z., King, L., Kovara, C., Kowis, C., Kaff, C.L., Lebow, H., Lovan, J., Lewis, L., Li, Z., Liu, J., Liu, J., Liu, Y., London, P., Loongacre, S., Lopez, J., Liu, J., Liu, W., Liu, Y., London, P., Loongacre, S., Lopez, J., Liu, J., Liu, J., Liu, Y., London, P., Loongacre, S., Lopez, J., Liu, J., Kally, S., Kally, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Allen,C., Allen,H., Alsbrooks,S., Amin,A., Anguiano,D., Anyalebechi,V., Aoyagi,A., Ayodeji,M., Baca,E., Baden,H., Baldwin,D., Bandaranaike,D., Barber,M., Barnstead,M., Benswalo,K., Blair,J., Blankenburg,K., Blyth,P., Brown M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC109525
AC109525.6 GI:23603814
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ENRICHED.
Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478059 bp DN Rattus norvegicus clone CH230-255D23, ***, 5 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bryant, N., Buhay, C., Burch, P., Burrell, K., Calderon,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ||| :::
TTTTTTATT 1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Begin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100001
200001
300001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110000
210000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Blankenburg, K., Blyth, P., Brown, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 End
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         410000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS AC109525 Accession AC109525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Abramzon, S., Adams, C., Alder, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear HTG 11-OCT-2002
SEQUENCING IN PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Benahmed, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                    source
```

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Oct 9, 2002 this sequence version replaced gi:22795167.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence contigs will be indicated in the feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (05-FEB-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (11-OCT-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Weinstock, G. and Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Worley,K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOTE: Estimated insert size may differ from sequence length
(see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html)
NOTE: This sequence may represent more than one clone.
NOTE: This is a "working draft' sequence. It currently
consists of 5 contigs. The true order of the pieces
is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 478059)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases
                                                                                                                                                                                                                                                                                                                 235024
235124
246066
246166
274602
474602
474702
475762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Assembly program: Phrap; version 0.990329
Assembly program: Phrap; version 0.990329
Consensus quality: 380245 bases at least Q40
Consensus quality: 385911 bases at least Q30
Consensus quality: 389757 bases at least Q20
Estimated insert size: 390792; sum-of-contigs estimation
Quality coverage: 6x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Center project name: GPHZ
Center clone name: CH230-255D23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----- Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Web site: http://www.hgsc.bcm.tmc.edu/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Baylor Co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----- Genome Center
Center: Baylor College of Medicine
/note="wgs_end_extension
clone_end:Sp6"
                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                           /clone="CH230-255D23"
                                                                                                                                               /mol_type="genomic DNA
/db_xref="taxon:10116"
                                                                                                                                                                                                         organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                      235023: contig of 235023 bp in length
235123: gap of unknown length
246065: contig of 10942 bp in length
246165: gap of unknown length
474601: contig of 228436 bp in length
474701: gap of unknown length
475761: contig of 1060 bp in length
475861: gap of unknown length
478861: gap of unknown length
                                                                                                                                                                        DNA"
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                               AC094443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x AC109525_0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
Muzny, D. Marie, Metzker, M. Lee., Abramzon, S., Adams, C., Alder, J., Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, D., Anyalebechi, V., Aoyagi, A., Ayodeji, M., Baca, E., Baden, H., Baldwin, D., Bandaranaike, D., Barber, M., Barnstead, M., Benahmed, F., Blyth, P., Brown, M., Bliar, J., Blair, J., Blankenburg, K., Blyth, P., Brown, M., Bryant, N., Buhay, C., Burch, P., Burrell, K., Calderon, E., Cardenas, V., Carter, K., Cavazos, I., Ceasar, H., Center, A., Chu, J., Chacko, J., Chavez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Claveland, C., Cokrell, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davila, M.L., Davis, C., Davy-Carroll, L., De Anda, C., Dederich, D., Delgado, O., Denson, S., Deramo, C., Ding, Y., Dinh, H., Divya, K.,
                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                              Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                          HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ENRICHED.
                                                                                                                                                                                                                                                                                                                                                                                     AC094443 237019 bp Rattus norvegicus clone CH230-4F6,
                                                                                                                                                                                                                                                                                                                                    AC094443.6 GI:30466976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCAGCCAGCCAGCCAACCA 53071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaSerThrProAlaGluPhePro 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlyGlyValProThrGlyThrGlySerPheThrValThrGlyArgProThr------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ThrAlaGluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGly 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluPro 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaGlyValProIleAspIleProProValAspThrThrAlaAlaProGluProSerGlu 105
                                                                                                                                                                                                      (bases 1 to 237019)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="wgs_contig" 350281. .351366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               406035. .407045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="wgs_contig"
358886. .361234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="wgs_contig"
287702. .289205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       end_sequence:RXACK24TVB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="clone_boundary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="wgs_contig"
84236 c 86247 g 111645 t 85141 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="wgs_contig"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            235\overline{124}.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               site:MboI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22.1
160.50
52.27%
38.64%
15.69%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              end:Sp6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 236699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1-110000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative:
                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          110000
34
12
39
3
                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                     IN PROGRESS ***,
                                                                                                                                                                                                                                                                                                                                                                                                    HTG 09-MAY-2003
```

TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL

REFERENCE AUTHORS TITLE

JOURNAL

COMMENT

Center: Baylor Cocenter code: BCM Web site: http://

- Genome Center aylor College o

of Medicine

```
Egan, A., Escotto, M., Bugene, C., Evans, C.A., Falla, T., Fan, G., Eswas, K., Egan, A., Escotto, M., Bugene, C., Evans, C.A., Falla, T., Fan, G., Ferrandez, S., Finley, M., Flagg, M., Forbes, L., Foster, M., Garza, M., Garra, M., Garra, M., Guerra, M., Martin, S., Hadder, J., Idlebird, D., Johnson, B., Johnson, R., Johise, M., Kara, C., L., Lebow, H., Levan, J., Levas, J., Leva
```

```
ACCESSION
VERSION
                                                                     RESULT 34
AP000721/c
                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                   5
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                             ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                   밁
                                                                                                                                          S
                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-4 (1-194) x AC094443 (1-237019)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                      23248
                                                                                                                   23488
                                                                                                                                                                                                                                                                                             23308
                                                                                                                                                                                                      146
                                                                                                                                                                                                                                                                126
                                                                                                                                                                                                                                                                                                                          106
                                                                                                                                               163
                                                                                                                                                                                                                                                                                                                                                                                   98
             sequence.
AP000721
                                           Homo sapiens
                                                            AP000721
 AP000721.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).

NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: Estimated insert size may differ from sequence length
                                                                                                                                                                                                                                                                                                                                                                                AlaGlyValProlleAspIleProProValAspThrThrAlaAlaProGluProSerGlu
                                                                                                                                                                                                                                                                                              ACCAACCAACCAACCAACCAACCAACCAACCACCCAACCAACCAACCAACCAACCAACCA
                                                                                                                                                                                                                                                                                                                                                       GlyGlyValProThrGlyThrGlySerPheThrValThrGlyArgProThr----- 162
                                                                                                                                                                                                                                                                ThrAlaGluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGly 145
                                                                                                                                                                                                                                                                                                                    ThralaGluProThralaGluProThrGluGluProThrAlaGluProThrAlaGluPro 125
                                                                                                                   GCCAGCCAGCCAGCCAACCA 23511
                                                                                                                                             AlaSerThrProAlaGluPhePro 170
                                                                                                                                                                                                                                     Assembly program: Atlas; Consensus quality: 229994 bases at least Q40 Consensus quality: 231178 bases at least Q30 Consensus quality: 232607 bases at least Q20 Estimated insert size: 244941; sum-of-contigs estimation Quality coverage: 6x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        231234
231334
233042
233142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Rattus norvegicus"
/mol_type="genomic DNA"
/db xref="teaxon:0116"
/clone="CH230-4F6"
227374. 228903
/note="wag contig"
228959. 231233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="wgs_contig"
46066 c 45849 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            231233: contig of 231233 bp in length
4 231333: gap of unknown length
2 233041: contig of 1708 bp in length
2 233141: gap of unknown length
2 237019: contig of 3878 bp in length.
Location/Qualifiers
1. 237019
                                                                                                                                                                                                                                                                                                                                                                                                                                                       160.50
52.27%
38.64%
15.69%
 GI:28189504
                                           genomic DNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Summary Statistics
                                                          124636 bp
                                            chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              r
                                                            DNA
                                           11 clone: CMB9-91L24, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3683
                                                                                                                                                                                                                                                                                                                                                                                                                                         237019
34
12
39
39
                                                            PRI 01-FEB-2003
                                                                                                                                                                                                                                    23427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
             LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                    밁
                                                                                                                                                           á
                                                                                                                                                                                          Вb
                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                       AC106943/c
                                                                                                     RESULT 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                     52235
                                                                                                                                    52000
                                                                                                                                                                                                                                                   52118
                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                       163
                                                                                                                                                                                                                                                                                 145
          Rattus norvegicus clone CH230-36G6, *** SEQU AC106943
AC106943.4 GI:22857065
AC106943.4 GI:22857065 DRAFT; HTGS_ENRICHED.
Rattus norvegicus
                                                                        AC106943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .. .124636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26.6
160.00
50.43%
41.74%
15.64%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34493 C
                                                          259772 bp
clone CH230-36G6,
 (Norway rat)
```

```
US-10-081-935-4 (1-194) x AP000721 (1-124636)
                                                                                                                                                                                                                       52059 CCAGCCAACACCCCGGCCAACAC-CCTGGTGTGGGTAGTGGCGTGGAGTTCCTGCCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fujiyama,A., Yada,T., Totoki,Y., Wa Homo sapiens genomic DNA Published Only in Database (1999) 2 (bases 1 to 124636) 2 (bases 1 to 34636) 3 Hattori,M., Ishi,K., Toyoda,A., Ta Fujiyama,A., Yada,T., Totoki,Y., Wa Direct Submission
                                                                                                                                                                       182 GlyIleAlaAlaAla----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (12-NOV 1999) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suehiro-chou, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:hattori@gsc.riken.go.jp/, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170 on Jan 31, 2003 this sequence version replaced gi:21623945.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hattori,M., Ishii,K., Toyoda,A.,
Fujiyama,A., Yada,T., Totoki,Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (human)
                                                                                                                                                                                                                                                                 ---AlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerValGly 181
                                                                                                                                                                                                                                                                                                                        CA-GCCAACACCCCAACCAACACCCAACCAATÁCCCCAGGCAACAACCCAÁCCAACATC 52060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGlu 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAATATGCCAACCAACACCCCAGCCAACACACCCAACACCCCAGGCAACACTTCAA 52236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProIleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGlu 108
                                                                                                                                                                                                                                                                                                                                                                       GlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArgProThr----- 162
                                                                                                                                                                                                                                                                                                                                                                                                                           CCAACACCCTGGGCAACACCCCAGCCAACACCCCAGCCAACACCCCAACCA---ACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pro-----ThrHisGluProThrGluGluProThrAlaValProThrGlyThr 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="CMB9-91L24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chromosome="11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27360
                                                                                                                                                        --LeuLeuGlyLeuAla 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Taylor,T.D.,
Watanabe,H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Taylor, T.D., Hong-Seog, P. Watanabe, H. and Sakaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
14
15
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and Sakaki,Y.
                                                                                                                           51956
HTG 08-OCT-2002
IN PROGRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                 52119
```

linear SEQUENCING

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pasternak, S., Paul, H., Perez, A., Perez, L., Pfannkoch, C., Plopper, F., Poindexter, A., Popovic, D., Primus, E., Pu, L.-L., Puazo, M., Ouiroz, J., Rachlin, E., Reeves, K., Regier, M.A., Reigh, R., Reilly, B., Reilly, M., Ren, Y., Reuter, M., Richards, S., Riggs, F., Rives, C., Rodkey, T., Rojas, A., Rose, M., Rose, R., Ruiz, S. J., Sanders, M., Savery, G., Scherer, S., Scott, G., Schatsman, S., Shen, H., Shetty, J., Shvartsbeyn, A., Sisson, I., Sitter, C.D., Smajs, D., Sneed, A., Sodergren, E., Song, X.-Z., Sorelle, R., Sosa, J., Taylor, C., Steimle, M., Strong, R., Sutton, A., Svatek, A., Tabor, P., Taylor, C., Steimle, M., Strong, R., Sutton, A., Svatek, A., Tabor, P., Taylor, C., Taylor, T., Thomas, S., Tingey, A., Trejos, Z., Usmani, K., Valas, R., Vera, V., Villasana, D., Waldron, L., Walker, B., Wang, J., Warren, R., Wei, X., White, F., Wallson, R., Walczyk, R., Woden, H., Worley, K., Willson, R., Walczyk, R., Woden, H., Worley, K., Wilson, R., Walczyk, R., Woden, H., Won, V., Yu, F., Zhang, J., Zhou, X., Zhou, X., Zhao, S., Dunn, D., von Niederhausern, A., Weiss, R., Smith, D.R., Holt, R.A., Smith, H.O., Direct, Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cardenas, V., Carter, K., Cavazos, I., Ceasar, H., Center, A., Chen, C., Chen, C., Chen, Z., Chu, J., Chacko, J., Chevez, D., Chen, G., Chen, R., Chen, Y., Chen, Z., Chu, J., Cleveland, C., Cockrell, R., Cox, C., Coyle, M., Cree, A., D'Souza, L., Davila, M. L., Davis, C., Davy, Carroll, L., De Anda, C., Dederich, D., Davila, M. L., Davis, C., Dung, Y., Dinh, H., Divya, K., Deramo, C., Ding, Y., Dinh, H., Divya, K., Egan, A., Escotto, M., Eugene, C., Evans, C.A., Falls, T., Fan, G., Falls, T., Fan, G., Foster, M., Gabria, A., Garner, T., Garza, M., Gebregoorgis, E., Geer, K., Gill, R., Gardy, M., Guerra, M., Guevara, M., Gebregoorgis, E., Geer, K., Gill, R., Gardy, M., Guerra, M., Guevara, M., Gebregoorgis, E., Geer, K., Gill, R., Gardy, M., Hernandez, J., Hernandez, J., Haaland, W., Handlorson, A., Hogues, M., Hernandez, J., Hernandez, J., Havlak, P., Hawes, A., Henderson, A., Hogson, A., Hogues, M., Jackson, A., Lackson, A., Jackson, A., Lackson, A., Jackson, A., Jackson, A., Lackson, A., Jackson, A., Jackson, A., Jackson, A., Jackson, A., Lack
              Direct Submission
Submitted (08-CCT-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
On Sep 14, 2002 this sequence version replaced gi:21737094.
The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described
                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (14-JAN-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
3 (bases 1 to 259772)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Worley, K.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                            Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Baldwin,D., Bandaranaike,D., Barber,M., Bar
Biswalo,K., Blair,J., Blankenburg,K., Blyth
Biryant,N., Buhay,C., Burch,P., Burrell,K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Muzny,D.Marie., Metzker,M.Lee., Abramzon,S., Allen,C., Allen,H., Alsbrooks,S., Amin.A.. A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Allen, C., Allen, H., Alsbrooks, S., Amin, A., Anguiano, Anyalebechi, V., Aoyagi, A., Ayodeji, M., Baca, E., Bade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 259772)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 259772)
table below
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Darber, M., Barnsucur, M., nburg, K., Blyth, P., Brown, M., nburg, K., Blyth, P., Calderon, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barnstead, M., Benahmed, F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adams, C., Alder, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
```

assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separate by sized gaps filled with Ns to the estimated size. The sequence may extend beyond the ends of the clone and there may be sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence only contigs will be indicated in the feature shotgun sequence only contigs will be indicated in the feature Genome Center and separated

\* NOTE: Estimated insert size may differ from sequence length

(see http://www.hgsc.bcm.tmc.edu/docs/Genbank\_draft\_data.html)

NOTE: This sequence may represent more than one clone.

NOTE: This is a 'working draft' sequence. It currently

consists of 1 contigs. Gaps between the contigs

are represented as runs of N. The order of the pieces

is believed to be correct as given, however the sizes

of the gaps between them are based on estimates that have

provided by the submittor.

This sequence will be replaced

by the finished sequence as soon as it is available and

the accession number will be preserved. 61631 Assembly program: Phrap; version 0.990329
Consensus quality: 233717 bases at least Q40
Consensus quality: 233719 bases at least Q30
Consensus quality: 23622 bases at least Q20
Estimated insert size: 252037; sum-of-contigs estimation
Quality coverage: 4x in Q20 bases; sum-of-contigs estimation Web site: http://www.hgsc.bcm.tmc.edu/ Contact: hgsc-help@bcm.tmc.edu ----- Project Information Center project name: GONR Center clone name: CH230-36G6 Center: Baylor Co Center code: BCM 258597. .25977. /note="wgs\_contig" /s 50763 c 55648 g Ø 254751. /note="wgs\_contig" 3446. .6094 /note="wgs\_contig" 258597. .259772 /note="wgs\_contig" 254751. .255855 Location/Qualifiers /clone="CH230-36G6" 'mol\_type="genomic DNA"
'db\_xref="taxon:10116" organism="Rattus norvegicus" .259772 College of Medicine 72338 t 19392 others

Similarity: 56 159.50 52.86% 51.43% 15.59% Conservative: Mismatches: Indels: Length: Matches:

US-10-081-935-4 (1-194) x AC106943 (1-259772)

| γQ                                                                   | Db 4                                         | 8                                                            | Db 4                                                            | Ş               |  |
|----------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------|-----------------|--|
| 124                                                                  | 7698                                         | 104                                                          | 7749                                                            | 84              |  |
| 124 GluProThrAlaGluProThrHisGluProThrGluGluProThrAlaValProThrGly 143 | 47698 CCGCCCACGCCACGCCACGCCACGCCACCGCCACGCCA | SerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAla | 47749 AGCAAGCCCACGGCACCGCTCACGGCACCGCCCACGGCACCGCCCACGGCA 47699 | SerLysAlaGlyVal |  |
| 143                                                                  | 17639                                        | 123                                                          | 17699                                                           | 103             |  |

COMMENT

ર્

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PFAPS230X/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47578 CCGCCCACGCCACCGCCACAGCACAAGGG 47549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plasmodium falciparum (malaria parasite P. falciparum)
plasmodium falciparum
plasmodium falciparum
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
1 (bases 1 to 9636)
williamson, K.C., Criscio, M.D. and Kaslow, D.C.
Cloning and expression of the gene for Plasmodium falciparum
transmission-blocking target antigen, Pfs230
Mol. Bicchem. Parasitol. 58 (2), 355-358 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium falciparum transmission blocking target antigen (Ps230)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Original source text: Plasmodium NF54) gametocyte cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L08135.1 GI:294175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA, complete cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PFAPS230X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L08135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrGlyGlyValProThrGlyThrGly 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NKEHDYTCDFTDKLDKTVPSTANGKKLFICRKHLKEFDTFTLKCNVNKTQYPNIEIFP
KTLKDKKEVLKLDLDIQYQMFSKFFKFNTQNAKYLNLYPYLIFPNHIGKKELKNND
TYKNHKDVKYPEQGSVLS-PLSSADSLGKLLNFLDTQETVCLTEKIRYLNLSINELGSD
NNTFSVTFQVPPYIDIKEPFYFMFGCNNNKGEGNIGIVELLISKQEEKIKGCNFHESK
LDYFNENISSDTHECTLHAYENDIIGFNCLETTHBNEVEVEVEDDEISVLQPENCFNNV
YKGLMSVDITTILKNACTYNINKKFTFTFLKIPPYNLLEBDVEISCQCTIKKQVKKKYK
ITKNDTVLLKREVQSESTLDDKIYKCEHENFINPRVNKTFDENVEYTCNIKIENFFN
                                                                                                                                                                                                                                                                                                                                                                       DEDEEEEKYGNOIEEDEHNEKI KMKTFFTQNIYKKNNIYPCYMKLYSGDIGGILFPKN
IKSTTCFEEMIPYNKEIKWNKENKSLGNLVNNSVVYNKEMNAKYFNVQYVHIPTSYKD
TLNLFCSIILKEEESNLISTSYLVYVSINEELNFSLFDFYESFVPIKKTIQVAQKNVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TESGDTAVSEDSYDKYASNNTNKEYVCDFTDQLKPTESGPKVKKCEVKVNEPLIKVKI
ICPLKGSVEKLYDNIEYVPKKSPYVVLTKEETKLKEKLLSKLIYGLLISPTVNEKENN
FKEGVIEFTLPPVVHKATVFYFICDNSKTEDDNKKGNRGIVEVYVEPYGNKINGCAFL
                                                  NINGILYLKNNLANFTYKHQFNYMEIPALMDNDISFKCICVDLKKKKYNVKSPLGPKV
LRALYKKLNIKFDNYVTGTDQNKYLMTYMDLHLSHKRNYLKELFHDLGKKKPADTDAN
                                                                                                     YIQIFCPAKDLGIYKNIQMYYDIVKPTRVPQFKKFNNEELHKLIPNSEMLHKTKEMLI
LYNEEKVDLLHFYVFLPIYIKDIYEFNIVCDNSKTMWKNQLGGKVIYHITVSKREQKV
KGCSFDNEHAHMFSYNKTNVKNCIIDAKPKDLIGFVCPSGTLKLTNCFKDAIVHTNLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSFEMGSKNITCFYPI VGKKERKTLDTI I I KKNVTNDHVVSSDMHSNVQEKNMILIRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LFYYSHNLFKTPETKEKKNKKECFYKNGGIYNLSKEIRMRKDTSVKIKQRTCPFHKEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /evidence=experimental
/product="Pfs230"
/protein_id="AAA29734.1"
/db_xref="GI:294176"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
KDIEQYVLQVNLKAPKLMMSAQIHNNRHVCDFSKNNLIVPESLKKKEELGGNPVNIHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /dev_stage="gametocyte"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNNIKDDEDKRFH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon start=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              function="transmission-blocking target antigen"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  isolate="NF54"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Plasmodium falciparum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      xref="taxon:5833"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _type="erythrocyte"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9636 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          falciparum (individual_isolate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INV 14-JUL-1993
```

밁 Ş В á

RESULT 37

DEFINITION

á 밁 á 밁 Ś 밁 Ş

```
AR178096/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-4 (1-194) x PFAPS230X (1-9636)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1515
                                                                                                                                                                                                                                                   1317
                                                                                                                                                                                                                                                                                                                                                         1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117
                                                                                                                                                                                              157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77 AsnIleValValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAsp 96
ARI78096 9636 bp
Sequence 1 from patent US 6316000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGlu 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGATATATTTCACCTTGC-------1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSer 76
                                                                                                                                                                                   ValThrGlyArgProThrAlaSerThrProAlaGluPhe 169
                                                                                                                                                                                                                                                                                                                                                      CCTACCTCTTCACCTACCTCTTCACCTACCTCTTCACCTACCTCTTCACCTACCTCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                     ProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGlu 136
                                                                                                                                                                                                                                                CCTACCTCTTCACCTACCTCTTCA-
                                                                                                                                                                                                                                                                                                  ProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThr 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /rpt_family="Glu"
/rpt_family="Glu"
/rpt_trype=direct
/rpt_unit=986...988
1283...1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTMQVESDNRNFDNIKKUENVIKNFLLPNIEKYALLLDDEERQKKIKQQQEEEQQEQI
LKDQDDRLSRHDDYNKNHTYLLYDSNEHICDYEKNESLISTLPNDTKKIQKSICKINA
KALDVVTIKCHTKNFTPKDYFPNSSLITNDKKIVITFDKKVFVTYIDPTKKTFSLKD
IYIQSFYGYGLLDLHAQIKKHEEMDDVHLFYPPHVLHNVLNNHIYNLSSALEGVLF
MKSKVTGDETATKKNTTLPTDGVSSILIPPYVKEDITFHLFCGKSTTKKPNKKNTSLA
LIHHHSSNRNIIHGCDFLYLENQTNDAISNNNNSYSIFTHKWTENNLICDISLI
KTVIGIKCPNKKLNPOTGDEVYYKQEDVPSKTITADKYNTFSKDKIGNILKNAISI
NNPDEKUNTYTYLILPEKFEEELIDTKKVLAGTCDNKYIIHMKIEKSTMDKIKIDEKK
TIGKDICKYDVTTKAATCEIIDTIBSSVLKEHHTVHYSITLSRMDKLIIKVPINEKTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IHFSLEFNNSLSLTKONONIIYGNVAKIFIHINOGYKEIHGCOFTGKYSHLFTYSKKP
LPNDDDICNVTIGNNTFSGFACLSHFELKPNNCFSSVYDYNEANKVKKLFDLSTKVEL
DHIKQNTSGYTLSYIIFNKESTKLKFSCTCSSNYSNYTIRITFDPNYIIPEPOSRAII
KYYDLODKNFAKYLRKL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VSISLALKGVYGNRIFTFDKNGKKGEGISFFIPPIKODTDLKFIINETIDNSNIKQRG
LIYIFVRKAVVSENSFKLCDFTTGSTSLMELNGQVKEKKCTVKIKKGDIFGLKCPKGFA
IFPOACESNVLLEYYKSDYEDSEH INYYIHKUKKYNLKFKDVIELMDERFRELONIQO
YTGISNITDVLHEKOFNLGNLPLNFKOHYSTAYAKVPDTFNSIINFSCNCYNPEKHVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HIDISNSNRKINGCDFSTNNSSILTSSVKLVNGETKNCEININNNEVFGIICONETNL
DPEKCFHEI'SKDNKTVKKFREVI PNIDIFSLHNSNKKKVAYAKVPLDY INKLLFSCS
CKTSHTNTIGTMKYTLNKDEKEEDDFKTAGGI KHNNYHLCNFFDNPELTFDNNXILVE
KIDAELFSEVIIQLPIFGTKNVEEGVQNEEYKKFSLKPSLVFDDNNNDIKVIGKEKNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GNGDVVVHNGVVDTGPVLDNSTFEKYFKNIKIKPDKFFEKVINEYDDTEEEKDLESIL
PGAIVSPMKVLKKKDPFTSYAAFVVPPIVPKDLHFKVECNNTEYKDENQYISGYNGII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /evidence=experimental
/rpt_unit=1283. .1294
974 c 1422 g 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FENFFVNPFNLKDKVLYNYNKPINIEHILPGAITTDIYDTRTKIKQYILRIPPYVHKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.26
158.00
46.02*
30.97*
15.44*
                                                                                                                                            CCTACCTCTTCATCTACATCTTCATTT 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3084 t
                                      DNA
                                      linear
                                         PAT 18-DEC-2001
                                                                                                                                                                                                                                                        1294
```

ORIGIN

Score:

9636 35 17 31 30

96

```
Best Local Si
Query Match:
DB:
                                   BASE COUNT
ORIGIN
                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                       RESULT 38
I95887/c
LOCUS
                                                                                    JOURNAL FEATURES
                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                   ઇ
                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL FEATURES
        Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-4 (1-194) x AR178096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                  1377
                                                                                                                                                                                                                                                                                                              1293
                                                                                                                                                                                                                                                                                                                                                                 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1485
          Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1515
                                                                                                                                                                                                                                                                                                                                                                                          137
                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                      157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity:
                                                                                              1 (bases 1 to 9636)
Williamson,K.C. and Kaslow,D.C.
Cloning and expression of Plasmodium
blocking target antigen, Pfs230
Patent: US 5733772-A 1 31-MAR-1998;
                                                                                                                                                                                                                 Sequence 1 from patent 195887 195887 195887.1 GI:3940357
                                                                                                                                                                                                                                                          195887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              williamson, K.C. and Kaslow, D.C.
Williamson, K.C. and Kaslow, D.C.
Cloning and expression of plasmodium falciparum
transmission-blocking target antigen, PFS230
Patent: US 6316000-A 1 13-NOV-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AR178096
AR178096.
                                                                                                                                                                             Unknown
                                                                                                                                                                Unclassified
                                                                                                                                                                                           Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValThrGlyArgProThrAlaSerThrProAlaGluPhe 169
                                                                                                                                                                                                                                                                                                                                                                                 ProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThr 156
                                                                                                                                                                                                                                                                                                                                                                                                              CTACCTCTTCACCTACCTCTTCACCTACCTTCACCTACCTCTTCACCTACCTCTTCA 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                 ProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTACATAT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AsnIleValValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSer
                                                                                                                                                                                                                                                                                                                                                                CCTACCTCTCACCTACCTCTTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGlu 116
                                               4156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4156
                                               þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ļ
                                              /organism≃"unknown"
974 c 1422 g
                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="unknown"
974 c 1422 g
                                                                         .9636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.26
158.00
46.02%
30.97%
15.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 9636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:17920989
                                                                                                                                                                                                                                                                                                             -CCTACCTCTTCATCTACATCTTCATTT
                                             1422 g
                                                                                                                                                                                                                                           9636 bp
: US 5733772.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-9636)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCACCTTCTTCTTCACCTACCTTCTTCACCTTCTTCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
                                               3084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3084
                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           c
                                                                                                                        falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9636
35
17
31
30
                                                                                                                                                                                                                                                         linear
                                                                                                                        transmission
                                                                                                                                                                                                                                                       PAT 01-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1486
                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76
                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 39
PFAS230A/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-4 (1-194) x 195887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No.:
                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                         mRNA
                                                                                                                                gene
                                                                                5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1485 TCTACATAT-----TCACCTTCTTCTTCACCTACCTCTCACCTTCTTCTTCA 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57
                                                                                                                                                                                                                                                                                                                                                         Plasmodium falciparum 3D7
Plasmodium falciparum 3D7
Plasmodium falciparum 3D7
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
1 (bases 1 to 9654)
Bhatti.S., Alano,P., Luo,C., Hansra,S., Aikawa,M., Carter,R.
Elliott,J.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    L04162
L04162.1
                                                                                                                                                                                                                                                                           Original source text: Plasmodium stage and gametocyte possibly in Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                            Gene cloning of a large Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                    Unpublished (1993)
                                                                                                                                                                                                                                                                                                                                    ancigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PFAS230A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValThrGlyArgProThrAlaSerThrProAlaGluPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThr 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTACCTCTTCACCTACCTCTTCACCTACCTCTCACCTACCTTCACCTACCTCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGlu 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGlu 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATATATTTCACCTTGC------1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSer 76
||| |||:::|||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AsnIleValValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAsp
/gene="8230"
/codon start=1
/protein_id="AAA57559.1"
/db_xref="GI:605631"
                                                    /gene="8230"
179. .9586
                                                                                                                                                         /dev_stage="sexual stage asexual stages"
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:605630
                                                                                                                                                                                                 /db_xref="taxon:36329"
/map="chromosome 2"
                                                                                         'gene="8230"
                                                                                                                    /gene="8230"
                                                                                                                                                                                               /map="chromosome
                                                                                                                                                                                                                           /strain="3D7"
                                                                                                                                                                                                                                                  organism="Plasmodium"
                                                                                                                                             germline
                                                                                                                                                                                    clone="8Y"
                                                                                                                                                                                                                                      mol_type="mRNA"
                                                                                                         .9654
                                                                                                                                   .9654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.26
158.00
46.02%
30.97%
15.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -CCTACCTCTTCATCTACATCTTCATTT 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (1-9636)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9654
(clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bр mRNA
sY) s230 ml
```

mRNA,

linear INV 2 , complete cds.

INV 29-DEC-1994

169

falciparum

3 **D** 7

and gametocyte possibly in

falciparum (strain 3D7) sexual asexual stages cDNA to mRNA.

sexual stage surface Carter, R. and

Percent Similarity: Best Local Similarity: BASE COUNT US-10-081-935-4 (1-194) Pred. No.: Alignment Scores: 1545 57 GGATATATTTCACCTTGC---GlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSer 76 9587. .9654 /gene="s230" a 976 c 1 DEDEBERKY GOOT EEDEHNEKI KOKTFFTQNI YKKNNI Y CYMKLYSGDIGGILFPKN
I KSTTCFEEM I PYNKEI KONKENKSLONLUNUSVYNKEMNAKY ENVOYVHLETSYKD
TLNLFCSI I LIKEEESNIL I STSYLVYVSI NEELHKLIFSLEDFYSESFVPI KKTI QVAQKNVN
NKEHDYTCDFTDKLDKTVFSTANGKKLFI CRKHLKEFDTFTLKCNVNKTQYPNI EI FP
KTLKDKKEVLKLDLDI OYQMFSKFFKENTQNAKYLNLY PYLLI FPKNHIGKKELKNNP
TYKNHKDVKYFEQSSVLS PLSSADSLGKLLNFLDTQETVCLTEKI RYLLNES INELGSD
NNTFSVTFQVPPYI DI KEPFY FMFGCNNIKGEGNIGI VELLI SKQEEKI KGCNFHESK
LDYFNENI SSDTHECTLHAY ENDI I GFNCLETTHPNEV UFVELDENDET YLDPENCFNNV
YKGLNSVDI TTI LKNAQTYNI NNKKTPTFLKI PPYNLLEDVEI SQCTI KQUVKKI KV
I I TKNDTVLLKKBVQSESTLDDKI YKCEHENFI INPRVNKTFDENVETTLONSENLHKTKEMENI
I TGNFFNDAGTYNI NNKKTPTFT L NPRVNKTFDENVETTLONSENLHKTKTEMLI
I TGNFFNDAGTYNI NNKTTPTFT L NPRVNKTFDENVETTLONSENLHKTKTEMLI
I TGNFFNDAGTYNI NNKTTPTFT L NPRVNKTFDENVETTLONSENLHKTKTEMLI
I TGNFFNDAGTYNI NNKTTPTFT L NPRVNKTFNDAGTYNI KI ENFFN
I TGNFFNDAGTYNI NNKTTPTFL NPRVNKTFDENVETTLONSENLHKTTKENED
I THE TON THE /translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNNIKDDEDKRFH LFYYSHNLFKTPETKEKKNKKECFYKNGGIYNLSKEIRMRKDTSVKIKQRTCPFHKEG SSFEMGSKNITCFYPIVGKKERKTLDTIIIKKNVTNDHVVSSDMHSNVQEKNMILIRN VSISLALKGVYGÑRIFTFDKNGKKGEGISFFIPPIKQDTDLKFIINETIDNSNIKQRG LIYIFYRKNVSENSFKLCDFTTGSTSLMELNSQVKEKKCTVKIKGDIFGLKCPKGFA LIYIFVRKNVSENSFKLCDFTTGSTSLMELNSQVKEKKCTVKIKKGDIFGLKCPKGFA QIFQAKCFSNULLEBYYKSDYEDSEHINYYIHKOKKYNLKFKDVIELMEBERFELQNIQ YTGISNITDVLHFKNFNLGNLPLNFKNHYSTAYAKVPDTFNSIINFSCNCYNPEKHVY GTMQVESDNRNFDNIKKNENVIKNFLLPNIEKYALLLDDEERGKXIKQQGEEGQQQI LKDQDDRLSRHEDDYNKHTYYLLYDSNEHICDYKKNESLISTLPNDTKKIQQGEEGQQQI LKDQDDRLSRHEDDYNKHTYYLLYDSNEHICDYKKNESUSTLPNDTKKIQQGEEGQAGI LYNEEKVDLLHFYVFLPIYIKDIYEFNIVCDNSKTMWKNOLGGKVIYHITVSKREOKV
KGCSEDNEHAHMESYNKTNVKKCIIDAKPKDLIGFVCESGTLKLTNCFKDAIVHTNLT
NINGILYLKNNLANFTYKHQFNYMEIPALMDDISFKCICVDLKKKKYNVKSPLGPKV
LRALYKKLNIKFDNYVTGTDQNKYLMTYMDLHLSHKRNYLKELFHDLCKKKKPADTDAN
PESIIESLSINESNESGPFPTGDVDAEHLILEGYDTWESLYDEQLEEVIYNDIESLEL
KDIEQYVLQVNLKAPKLMMSAQIHNNHHVCDFSKNNLIVPESLKKKEELGGNPNNIHC TESGDTAVSEDSYDKYASNNTNKEYVCDFTDQLKPTESGPKVKKCEVKVNEPLIKVKI ICPLKGSVEKLYDNIEYVPKKSPYVVLTKEETKLKEKLLSKLIYGLLISPTVNEKENN FKEGVIEFTLPPVVHKATVFYFICDNSKTEDDNKKGNRGIVEVYVEPYGNKINGCAFL SSPKRKKTVVQKKHKSNFFINSSLKYIYMYLTPSDSFNLVRRNRNLDEEDMSPRDNFV KYVDLQDKNFAKYLRKL" IHFSLEFNNSLSLTKQNQNIIYGNVAKIFIHINQGYKEIHGCDFTGKYSHLFTYSKKP LPNDDDICNVTIGNNTFSGFACLSHFELKPNNCFSSVYDYNEANKVKKLFDLSTKVEL DHIKQNTSGYTLSYIIFNKESTKLKFSCTCSSNYSNYTIRITFDPNYIIPEPQSRAII IY1QSFYGVSLDHLNQ1KKIHEEMDOWHLFYPPHNULHNVULNHIVNLSSALEGVLF MKSKVTGDETAFKNTTLFTDGVSSILILIPYVKDD1TFHLFGNKHTKKPNKKYTSLA LIHHHISSNRNIHGCDFLYLENOTNDAISNNNNSYSIFTHNKUTENULICDISLIB KTVIGIKCPNKKLNPQTCFDEVYYVKOEDVPSKTITADKYNTFSKDKIGNILKNAISI DPEKCFHEIYSKDNKTVKKFREVIPNIDIFSLHNSNKKKVAYAKVPLDYINKLLFSCS CKTSHTNTIGTMKVTLNKDEKEEEDFKTAQGIKHNNVHLCNFFDNPELTFDNNKIVLC KIDAELFSEVIIQLPIFGTKNVEEGVQNEEYKKFSLKPSLVFDDNNNDIKVIGKEKNE YALLKPLDTLYVKCPTSKDNYEAAKVNISENDNEYELQVISLIEKRFHNFETLESKKP GNGDVVVHNGVVDTGPVLDNSTFEKYFKNIK KKPKFFEKVIRKYDDTEEKDLESIL PGAIVSPMKYLKKKDPFTSYAAFVVPPIVPKDLHFKVECNNTEYKDENQYISGYNGI HIDISNSNRKINGCDFSTNNSSILTSSVKLVNGETKNCEININNEVPFGIICDNETNL FENFFVNPFNLKDKVLYNYNKPINIEHILPGAITTDIYDTRTKIKQYILRIPPYVHKD NNPDEKDNTYTYLILPEKFEEELIDTKKVLACTCDNKYIIHMKIEKSTMDKIKIDEKK TIGKDICKYDVTTKVATCEIIDTIDSSVLKEHHTVHYSITLSRWDKLIIKYPTNEKTH IDKENKNDIQNVEEKIQRDTYENKDYESDDTLIEWFDDNTNEENFLLTFLKRCLMKIF 3.27 158.00 46.02% 30.97% 15.44% × PFAS230A 1432 (1-9654)ω Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps: 3042 ----CTTTCTTTTTCA 1516

S

밁

Query DB:

ORIGIN

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE001393/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 40
                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                     repeat_region
                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1515 TCTACATAT------TCACCTTCTTCTTCACCTACCTCTTCACCTTCTTCTTCA 1468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97 ThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGlu 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77 AsnIleValValAspGlnCysSerLysAlaGlyValProlleAspIleProProValAsp 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.

1 (bases 1 to 15148)

Gardner, M.J., Tettelin, H., Carucci, D.J., Cummings, L.M., Aravind, L., Koonin, E.V., Shallom, S., Mason, T., Yu, K., Fujii, C., Pederson, J., Shen, K., Jing, J., Aston, C., Lai, Z., Schwartz, D.C., Pertea, M., Salzberg, S., Zhou, L., Sutton, G.G., Clayvon, R., White, O., Salzberg, S., Zhou, L., Adams, M.D., Vencer, J.C. and Hoffman, S.L. Chromosome 2 sequence of the human malaria parasite Plasmodium fairing arms.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 15148)
2 (bases 1 to 15148)
2 (bases 1 to 15148)
2 (bases 1 to 15148)
3 (arlton,J.M., Pain,A., Nelson,K.E., Bowman,S., Paulsen,I.T., Carlton,J.M., Pain,A., Nelson,K.E., Bowman,S., Paulsen,I.T., James,K., Eisen,J.A., Rutherford,K., Salzberg,S.L., Craig,A., James,K., Chan,M.-S., Nene,V., Shallom,S.J., Suh,B., Peterson,J., Kyes,S., Chan,M.-S., Nene,V., Sallom,S.J., Suh,B., Peterson,J., Angiuoli,S., Pertea,M., Allen,J., Selengut,J., Haft,D., Angiuoli,S., Pertea,M., Allen,J., Selengut,J., Haft,D., Mather,M.W., Vaidya,A.B., Martin,D.M.A., Fairlamb,A.H., Fraunholz,M.J., Roos,D.S., Ralph,S.A., McFadden,G.I., Cummings,L.M., Subramanian,G.M., Mungall,C., Venter,J.C., Carucci,D.J., Hoffman,S.L., Newbold,C., Davis,R.W., Fraser,C.M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complete sequence
AE001393 AE001362
AE001393.1 GI:38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE001393 15148 bp DN Plasmodium falciparum 3D7 chromosome
                                                                                                                                                                                                                                                                              Submitted (02-OCT-2002) The Institute for Genomic Research, Medical Center Dr, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                  Genome sequence of the human malaria parasite Plasmodium falciparum
Nature 419, 498-511 (2002)
3 (bases 1 to 15148)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Science 282 (5391), 1126-1132 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum 3D7
Plasmodium falciparum 3D7
                                                                                                                                                                                                                                                    Medical Center Dr, Rockville,
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                 Gardner, M.J
                                                                                                                                                                                                                                                                                                                                                                                                                                          Barrell,B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9804551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99021743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ValThrGlyArgProThrAlaSerThrProAlaGluPhe 169
||||||:::|||::: ::: |||
-----CCTACCTCTTCATCTACATCTTCATTT 1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTACCTCTTCACCTACCTCTTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThr 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGlu 136
/rpt_type=tandem
                       /chromosome="2"
                                                                                                                                                                                                         organism="Plasmodium falciparum 3D7
                                                                                                                                                                  /isoTate="3D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:3845175
                                                                                                                                          xref="taxon:36329"
                                                                                                                                                                                   _type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
me 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
section 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INV 04-OCT-2002 of 73 of the
                                                                                                                                                                                                                                                                                                         9712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1324
```

KDI EQYVLQVNLKAPKLMYSAQIHNNRHVCDFSKNNLI VPESLKKKEELGGNPVNIHC YALLKPLDTLYVKCPTSKDNYEAAKVNI SENDNEYELQVI SLI EKRFHNFETLESKKP

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CDS   | mRNA                                                | gene                                                                      | repeat_region                | repeat_region                                     | repeat_region      | repeat_region |                                               | repeat_region                                                | repeat_region                                 | repeat_region                                                    | repeat_region                       | repeat_region              | repeat_region                        | repeat_region | repeat_region |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------|---------------------------------------------------------------------------|------------------------------|---------------------------------------------------|--------------------|---------------|-----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------|-------------------------------------|----------------------------|--------------------------------------|---------------|---------------|
| / ICCUS_ tart=1 / (codon_ tart=1 / (codon_ tart=1 / (codon_ tart=1 / (product "transmission-blocking target antigen \$230 precursor" / protein id="AAC71870.1" / (db_xref="c1:3845176" / translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNNIKDDEDKRFH / translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNNIKDDEDKRFH / translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNNIKDDEDKRFH / translation="MKKIITLKNLFLIILVYIFSEKKDLRCNVIKGNTCPPHKEG SSFEMGSKNITCFYPIVGKKERKTLDTIIIKKNVTNDHVUSENFLITTLKRCLMKIF SSFEKKTVOKKHKSNFFISSLKYIYNTLFENSERHLYRRRRNLDEEDMSREDNFY IDDEEEEEEEEEEEEEEEEEEEEEDVDYVYEESGDTILEWFDDNTMEENFLITTLKRCLMKIF SSPKRKKTVOKKHKSNFFISSLKYIYNTLFENSERHLYRRRRNLDEEDMSREDNFY IDDEEEEEEEEEEEEEEEEEEEEDVDYVYEESGDETEROLQEEHQEEVGEEVGEE VGEEVGEEVGEEVGEEVGEEVGEEVGEEV | 10271 | /noce="FES30"<br><870>10277<br>/100:0 F107878787878 | /rpc cype=candem<br><870>10277<br>/locus_tag="PFB0405w"<br>/roto-Ubfs230" | /rpt_type=tandem<br>698. 814 | /rpt_type=tandem<br>/rpt_unit=(TAAAAA)n<br>697815 | /rpt_type=tandem . |               | /rpt_type=tandem<br>/rpt_unit=(TA)n<br>646681 | /rpt_type=tandem<br>/rpt_unit=(CAATA)n<br>complement(614681) | /xpt type=tandem<br>/rpt_unit=(TA)n<br>482502 | <pre>/rpc type=tandem /rpc unite (TA) n complement(360403)</pre> | /rpt_type=tandem complement(269313) | /rpt_unit=(TA)n<br>269 313 | /rpt type=candem<br>/rpt type=candem | . 153         | 1.4           |

```
repeat_region
                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                     repeat_region
                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DPEKCHEI YSKOKTYKKEREVI PHILIFSLEHRSHKKKVAYAKHUDYI NILLEGGE
CKTSHTWITCTMKVTLIKDEKEEDEKTAGEI GAINVHLCHFENDRELTFENNKI VLC
KIDABLEFSEVI IQLPI FGTKAVEEEDTKTAGEI GAINVHLCHFENDRELTFENNKI VLC
KIDABLEFSEVI IQLPI FGTKAVEEEDTKTAGEI GAINVHLCHFENDRELTFENNKI VLC
KIDABLEFSEVI IQLPI FGTKAVEEEDTKTAGEI SFFI PPI KOOTDLKFI II HETI DUNSU IKORG
LIYI FVRKNVSENS FKLCDFTTGSTSLMELNSQVKEKKCTVKI KKGDI FGLKCPKGFA
I FPOACFSNVLLEYYKSDYEDSEH INYY IKKDKKYNLKROVI ELMDEKPRELONI QO
YTGI SNI TDVLHFKNIFNLFNYSTAYAKVPDTFNS I INFSCNCYNPEKHYY
GTMQVESDNRHEDNI KKMENVI KNFLLPNI EKYALLLDEERQKI KQQDEEQQGOI
LKDQDDRLSBRIDDYNKHTYLLYDSNEH I CDYEKNESLI STLENDTKKI OKS I CKINA
KALDVVTI KCPHTKNFTPROY FINSSLI TINDKXI VI I FDKKIFVTY I DPTKKTFSLA
KALDVVTI KCPHTKNFTPROY SI LI PPYVKEDI TFHLYCGKSTTKKPNKKNTSLA
KALDVVTI KCPHTKNFTPROYSILL PPYVKEDI TFHLYCGKSTTKKPNKKNTSLA
KALDVVTI KCPHTKNFTPDGVSSILL PPYVKEDI TFHLYCGKSTTKKPNKKNTSLA
KALDVVTI KCPHTKNTTLPTDGVSSILL PPYVKEDI TFHLYCGKSTTKKPNKKNTSLA
LIHHI SSNRNI I HGCDFLYLLROGTNDAI SINNNNNSYSI FTHNKXTENNILI CDI SLI P
KTVIGI KCPNKKLNPOTCFDEVYYVKQDDVPSKTI TADKYNTFSKDKIGNI LKNAI SI
NNPDEKONTYTLI LPEKFEEELI DTKKVLACTCONKYI I HMKI EKSTMOKI I KYPTNEKTH
FENFFYNDFNLKDKVLYNNKPINI EHI LEDD PSKTI TADKYNTFSKDKIGNI LKNAI SI
NNPDEKONTYTLI LPEKFEEELI DTKKVLACTCONKYI I THKI EKSTMOKI I KYPTNEKTH
FENFFYNDFNLKDKVLYNNKPINI EHI LEDA HTTSKKI HTTSKKYLL FYTYSKK
DIFKSLEFNUSLSLIFKQNONI TYGNVAKI FIH JNGYKEI HTCHSKYSHLFTYSKK
DLPHODDI CNVTIGNTSGFACLSHFELKPNCFSSVYDYNEANVKKLFDLSTKVEL
DHIKONTSGYTLSYI I FNKESTKLKFSCTCSSNYSNYTIR I TFDDNYI I PEPQSRAI I
KYVNI LONKOSYTLSYI I FNKESTKLKFSCTCSSNYSNYTIR I TFDDNYI I PEPQSRAI I
                                                                                                                                                                                                                                                                                                                                     /rpt_type----
complement(7684.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_type=tandem complement (6292. /note="AT_rich"
                                                                                                    /rpt_type=tandem
/rpt_unit=(GAA)n
complement(9551.
/note="AT_rich"
                                                                                                                                                                                                                  complement (7991.
/note="AT_rich"
/rpt_type=tandem
8072. .8152
                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_type=tandem complement (6886. /note="AT_rich"
                                                  /rpt_type=tandem
10282. .10395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_type=tandem
complement(5536.
/note="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_type=tandem
complement(5476. .5498)
/note="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_type=tandem
/rpt_unit=(GGAGAA)n
2428. .2453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_type=tandem
/rpt_unit=(TAGG)n
2157. .2273
                                                                                                                                                                                                                                                                                                                       אַלגי.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_type=tandem
complement(3180. .3206)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_type=tandem
2008. .2183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GNGDVVVHNGVVDTGPVLDNSTFEKYFKNIKIKPDKFFEKVINEYDDTEEEKDLESIL
PGAIVSPMKVLKKKDPFTSYAAFVVPPIVPKDLHFKVECNNTEYKDENQVISGYNGII
HIDISNSNRKINGCDFSTNNSSILTSSVKLVNGETKNCEININNNEVFGIICDNETNL
                         rpt_type=tandem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_type=tandem
1991. .2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /rpt_type=tandem
1710. .1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KYVDLQDKNFAKYLRKL"
rpt_unit=(TAAA)n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="AT_rich"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  707. .1781
                                                                                                                                                                                                                                                                                                                       type=tandem
                                                                                                                                .9590)
                                                                                                                                                                                                                                                                                                                                                                            .7727)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          .6909)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .5570)
                                                                                                                                                                                                                                                                                                .8035)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .6320)
```

|             |                                                                                        | 03:09:16                                                 | cember 6, 2003, 03:09:16                                                           | ompleted: De<br>: 2869 secs   | Search completed: December<br>Job time : 2869 secs                                              |
|-------------|----------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------|
|             | 1988                                                                                   | rThrProAlaGluPh<br> :::   <br>ATCTACATCTTCATT            | 157 ValThrGlyArgProThrAlaSerThrProAlaGluPhe                                        | 157 ValThr<br>2014            | Qy 15<br>Db 201                                                                                 |
| 156<br>2015 | ProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThr                           | rGlyGlyGlyValPro                                         | ProThrAlaValProThrGlyThrGlyGlyG<br>      :::       :::<br>CCTACCTCTTCACCTACCTCTTCA |                               | Qy 137<br>Db 2038                                                                               |
| 136<br>2039 | ProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGlu 136                       | JProThrAlaGluPro<br>      :::   <br>                     | AlaGluProThrAlaGlu<br>:::       :::<br>TCTTCACCTACCTCTTCP                          |                               | Qy 117<br>Db 2098                                                                               |
| 116<br>2099 | ThrThrAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGlu 116    :::::              | rGluThrAlaGluPro<br>                                     | AlaAlaProGluProSer<br>                                                             | 7 ThrThr                      | Qy 97<br>Db 2158                                                                                |
| 96<br>2159  | ASDITEVALVALASPGINCYSSETLYSALAGIYVALPTOILEASPILEPTOPTOVALASP 96 :::                    | rLysAlaGlyValPro<br>                                     | ValValAspGlnCysSer<br>   <br> TATTCA                                               |                               | Qy 77<br>Db 2206                                                                                |
| 76<br>2207  | GlyGlnIleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSer<br>       :::        <br> | ıGluAlaCysProLeı                                         | IleThrProCysValGlu<br>   :::     <br>ATTTCACCTTGC                                  | 7 GlyGln<br>   <br>6 GGATAT   | Qy 57<br>Db 2236                                                                                |
|             |                                                                                        | -15148)                                                  | US-10-081-935-4 (1-194) x AE001393 (1-15148)                                       | 5-4 (1-1                      | US-10-081-93                                                                                    |
|             | 15148<br>35<br>17<br>31<br>31<br>30                                                    | Length: Matches: Conservative: Mismatches: Indels: Gaps: | 4.96<br>158.00<br>46.02%<br>9: 30.97%<br>15.44%                                    | ores:<br>larity:<br>imilarit; | Alignment Scores: Pred. No.: Score: Percent Similarity: Best Local Similarity: Query Match: DB: |
|             |                                                                                        | -                                                        | 1050210574<br>/rpt_type=tandem<br>/rpt_unit=(TAAA)n<br>1050210546                  | region                        | repeat_region                                                                                   |

```
Command line parameters:

MODEL=frame+ p2n.model -DEV=xlh
-Q=/Cgp2_1/USPTO_spool/US10081935/runat_12112003_144407_3656/app_query.fasta_1.199
-DB=Issued_patents_NA -QFMT=fastap_SUFFIX=rni -MINMATCH=0.1 -LOOFCL=0
-LOOFEXT=0 -UNITS=51ts -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR SCORE=pct -THR MAX=100 -THR MIN=0 -ALIGN=40
-MODE=LOCAL -OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-MODE=LOCAL -OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-USER=US10081935_@CGN 1 1_44 @runat 12112003 144407_3656 -NCPU=6 -ICPU=3
-NO MMAP -LARCEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG
-NO MMAP -LARCEQUERY -NEG_SCORES=0 -WAIT -SCBLOCK=100 -LONGLOG
-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6
-FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
                                                                                                                                                                                                                                                                                                                                           Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                     000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Issued_Patents_NA:*
1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/backfiles1.seq:*
          57.3 4403765

57.3 441159

53.7 1289

53.7 1302

53.7 10091

51.2 471

51.2 504

51.2 1781

51.2 1781

51.2 1781

51.2 1781

51.2 1781

51.2 1781

51.2 1781

51.2 1781
                                                                                                                                                                                                                                                                                                                                        Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-2
82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  November 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          569978 seqs, 220691566 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MQFSHALIALVAAGLASA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2003, 11:51:07; Search time 52 Seconds (without alignments) 152.786 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                           DB
       3 US-09-103-840A-2

3 US-09-103-840A-1

US-08-525-697-3

US-08-525-697-1

US-09-058-489-34

US-09-058-489-34

US-09-252-991A-8612

US-09-134-001C-959

US-08-389-564B-21

US-08-389-564B-21

US-08-389-564B-21

US-08-466-047B-21

US-08-466-047B-22

US-08-466-047B-22

US-08-389-564B-18
                                                                                                                                                                                                                                                                                                                                           ü
                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.5
7.0
7.0
Sequence 2, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 841, Appl
Sequence 861, Appl
Sequence 959, Appl
Sequence 21, Appl
                                                                                                                                                                                                                                                                                                                                     Description
```

|               | מ                | ,                 | a                 | ი               |                 |                 |             |           |               | ი             | ი          |               | ი          | O            |            | ი                | a             | ი          |                |               |               |                   |                  | ი                   |             | ი             | ი               | ი               | ი            | ი               | ი          | ი               | O                 |
|---------------|------------------|-------------------|-------------------|-----------------|-----------------|-----------------|-------------|-----------|---------------|---------------|------------|---------------|------------|--------------|------------|------------------|---------------|------------|----------------|---------------|---------------|-------------------|------------------|---------------------|-------------|---------------|-----------------|-----------------|--------------|-----------------|------------|-----------------|-------------------|
| ;             | , 4<br>, 7,      | 4                 | 4                 | 42              | 41 .            | 40              | 39          | 38        | 37            | 36            | 35         | 34            | 33         | 32           | 31         | 30               | 29            | 28         | 27             | 26            | 25            | 24                | 23               | 22                  | 21          | 20            | 19              | 18              | 17           | 16              | 15         | 14              | 13                |
|               |                  |                   | _                 |                 |                 |                 |             |           |               |               |            |               |            |              |            |                  |               |            |                |               |               |                   |                  |                     |             |               |                 |                 |              |                 |            |                 |                   |
| ,             | 2 6              | 5                 | Ö                 | Ö               | Ö               | 0               | 0           | 0         | 0             | 0             | 0          | 41            | 41         | 1            | 11         | 1                | 11            | 1          | 11             | 11            | 1             | 11                | 1                | 4                   | 2           | 2             | 2               | 2               | 2            | 2               | 2          | 42              | 42                |
| •             | 20.0             | ₽ :               | 8                 | œ               |                 |                 |             |           |               |               | 8          |               |            |              |            | 0                | 0             |            |                | 0             |               |                   | 0                | 0                   | _           | _             | _               | -               | -            | _               | -          | _               | 51.2              |
|               | 1179             | 1000              | 1053              | 951             | 795             | 765             | 717         | 669       | 504           | 465           | 304        | 36412         | 5045       | 5045         | 2123       | 1710             | 1566          | 1485       | 1230           | 1218          | 1056          | 975               | 972              | 528                 | 8096        | 8075          | ~               | 8075            | 7            | σ               | 2266       | $\mathbf{r}$    | -                 |
|               |                  |                   |                   |                 |                 |                 |             |           | 4             | 4.            | 4.         | 4             | w          | w            | 4          | 4.               | 4             | 4          | 4              | 4.            | .4            | 4                 | 4.               | 4                   | w           | 4.            | w               | w               | w            | w               | N          | w               | u                 |
|               | -09-252-99IA-100 | -09-252-9918-1621 | -09-252-991A-6421 | -09-252-991A-16 | 13-014A-        | 2               | 8-913-014A- | -25       | -09-512-342-1 | -09-252-991A- | -09-313-29 | -08-311-731A- | -09-390-   | -09-390-721- | -09-724-   | -09-252-991A-905 | 52-991A-9     | 2-991A-156 | -09-328-352-19 | -09-552-322-3 | -09-252-991A- | -09-252-991A-1567 | -09-252-991A-157 | US-09-252-991A-9137 | -09-058-48  | -09-539-879A- | -08-895-59      | -08-374-077     | -09-254-733- | -08-466-047B-2  | -389-564B- | -08-466-047B-1  | US-09-066-597-1   |
| בלמפוורם דססם | equence 10081    | decirco oter,     | emience 6421 A    | equence 16386.  | equence 8, Appl | equence 9931, A | e 7,        | e 3703, A | e 19, A       | e 162         | e 289      | e 132, Ap     | equence 3, | equence 1,   | equence 18 | equence 909      | equence 9220, | e 1565     | e 1918,        | e 3, App      | equence 8728, | equence 15674,    | e 1570           | e 9137, A           | equence 33, | e 1, Appl     | equence 1, Appl | equence 1, Appl | equence 1,   | equence 20, App | equence 20 | equence 18, App | Sequence 1, Appli |

## ALIGNMENTS

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Sequence 2, Application US/09103840A
Patent No. 6294228
; GENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
                                                                                                                                Alignment Scores:
US-10-081-935-2 (1-18) x US-09-103-840A-2 (1-4403765)
                                                                                                                                                               US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
US-09-103-840A-2
                                                                                                                                                                                                                                                                                                  SOFTWARE: 1
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                           FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION NUMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: WHITE, Owen R.
APPLICANT: FRASER, Claire M.
APPLICANT: VENTER, JOHN C.
TITLE OF INVENTION: DNA SEQUENCES
TITLE OF INVENTION: TUBERCULOSIS
                                                                                                                                                                               OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Mycobacterium tuberculosis
                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                LENGTH: 4403765
                                                                                                                                                                                                                                                                                                                 Patentin
                                                                                                                                                                             CDC 1551
"n" bases
represent
                                  1.85e+05
47.00
92.86%
64.29%
57.32%
                                                                                                                                                                             at various positions throughout the sequence {\tt a}, {\tt t}, {\tt c} or {\tt g}
                                                                                                                                                                                                                                                                                                                                                                                                               FOR
                                              Conservative: Mismatches: Indels:
                                                                                              Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN ANALYSIS IN MYCOBACTERIUM
                                00440
```

```
US-08-525-697-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-2 (1-18) x US-09-103-840A-1 (1-4411529)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: FLEISCHMAN, Robert D.
APPLICANT: WHITE, Owen R.
APPLICANT: FRASER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: DNA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM TITLE OF INVENTION: TUBERCULOSIS
FILE REFERENCE: 24366-20007.00
CURRENT APPLICATION UNMBER: US/09/103,840A
CURRENT FILING DATE: 1998-06-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, Applic
Patent No. 6294328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO
                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Mycobacterium tuberculosis OTHER INFORMATION: H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
APPLICATION NUMBER: US/08/525,697
FILING DATE: 21-SEP-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Harrington, James J.
REGISTRATION NUMBER: 38,711
REFERENCE/DOCKET NUMBER: 4004.204
                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
ADDITIONATION AUMEDE: 18/06/55 507
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 57957640 No. 5795764disk of No. 5795764th America, Inc. STREET: 5. Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Dalboege, Henrik
TITLE OF INVENTION: AN ENZYME EXHIBITING MANNANASE ACTIVITY
NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1218600 Tregegeacceregeregeregateerregeegeregaatregeeg 1218641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , Application US/08525697 5795764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09103840A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAla 16
                                                                                                                                                                                                                                                                                                                                                                                                                                      Christgau, Stephan
Andersen, Lene N
Kauppinen, Sakari
Heldt-Hansen, Hans P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.85e+05
47.00
92.86%
64.29%
57.32%
   4004.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4411529
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-525-697-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-08-525-697-3 (1-248)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-525-697-3
                                                                 TELEPHONE: 212-867-0123
TELEFAX: 212-878-9655
PRIOR APPLICATION DATA:
APPLICATION UMBER: DK 0486
FILING DATE: 30-APR-1993
CLASSIFICATION: 435
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                        COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/525,697
FILING DATE: 21-SEP-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Harrington, James J.
REGISTRATION NUMBER: 38,711
REFERENCE/DOCKET NUMBER: 4004.204-US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
TELEFAX: 212-878-9655
PRIOR APPLICATION DATA:
APPLICATION NUMBER: DK 0486/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: APPLICANT: 1
                              SEQUENCE CHARACTERISTICS:
LENGTH: 1302 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      о
:
                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 405 Le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 248 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: United States of America ZIP: 10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: New York
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24 ATGAAGCTTTCTCACATGCTCCTCAGCCTCGCCAGCCTGGGGGTGGCGACGCCT 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                 nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08525697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: No. 57957640 No. 5795764disk of No. 5795764th America, Inc. 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dalboege, Henrik
NVENTION: AN ENZYME EXHIBITING MANNANASE ACTIVITY
SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kauppinen, Sakari
Heldt-Hansen, Hans P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Andersen, Lene N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Christgau, Stephan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44.00
77.78$
44.44$
53.66$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.04
                                                                                                                          DK 0486/93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0 0 4 6 8 24 8
```

```
GENERAL INFORMATION:

APPLICANT: Whitehead Institute for Biomedical Research
APPLICANT: Lahn, Bruce
APPLICANT: Page, David

ITITLE OF INVENTION: Genes in the No. 6103886-Recombining if
ITITLE OF INVENTION: the Y Chromosome
FILE REFERENCE: WHI97-08pA
CURRENT APPLICATION NUMBER: US/09/058,489
CURRENT FILING DATE: 1998-04-10
EARLIER APPLICATION NUMBER: 60/041,877
EARLIER APPLICATION NUMBER: 60/041,877
                                                                                                                                                                                                                                                                                 US-09-252-991A-8612
                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                        RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-09-058-489-34 (1-10091)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 5
US-09-058-489-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-058-489-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18) x US-08-525-697-1 (1-1302)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-525-697-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                      Sequence 8612, Application US/09252991A Patent No. 6551795 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 34
LENGTH: 10091
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PILING DATE: 1998-07-18
PRIOR PILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 34, Application US/09058489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 6103886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 91
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                     3483 CTTCAACAAATCATGCTTTAGTTACTTTGGTAGCAGAAACCTTGCAACC 3533
                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAAGCTTTCTCACATGCTCCTCAGCCTCGCCAGCCTGGGGGTGGCGACGGCT 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               339
44.00
76.478
52.948
53.668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25
44.00
77.78%
44.44%
53.66%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6103886-Recombining Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18
```

```
US-08-389-564B-21/c
                                                                                                                                                                                                                                                                                                  RESULT 8
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                           US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-134-001C-959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
US-09-134-001C-959/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 959
LENGTH: 504
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-8612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PACENT NO. 6380370

GENERAL INFORMATION:

APPLICANT: Lynn Doucette-Stamm et al
APPLICANT: Lynn Doucette-Stamm et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCU:
TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC-007
CURRENT APPLICATION NUMBER: US/09/134,001C
CURRENT FILING DATE: 1998-08-13
PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
                                                                                                                                                                                                                 Sequence 21, Application US/08389564B Patent No. 5989870 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 8612
LENGTH: 471
                                                                 APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Inm n, Marja H.
APPLICANT: Penttil , Merja E.
TITLE OF INVENTION: A METHOD FOR CLONING AC
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: Sterne, Kessler, Goldstein & F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 959,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
               STREET: 1100 New CITY: Washington STATE: D.C.
COUNTRY:
                                                                                                                                                                                                                                                                                                                               134 CAATTTCACATTCTCTTCTACGTCTAATCGCA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                E: Sterne, Kessler, Goldstein & Fox P.L.L.C. 1100 New York Avenue, Suite 600
U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/09134001C
                                                                                                                                                                                                                                                                                                                                                                                                           x US-09-134-001C-959 (1-504)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        x US-09-252-991A-8612 (1-471)
                                                                                                                                                                                                                                                                                                                                                                                                                                                18.3
42.00
82.35%
58.82%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16.8
42.00
76.47%
41.18%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches:
Indels:
                                                                                                                          ACTIVE PROMOTERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0400
```

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: FC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Rel

Release #1.0, Version #1.25

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x US-08-389-564B-21 (1-1781)
                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-389-564B-22/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-389-564B-21
                                                                                                                                                                                                                                                                                                                                                                         Sequence 22, Application US/08389564B Patent No. 5989870
                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Ilm n, Marja H.
APPLICANT: Penttil, Merja E.
TITLE OF INVENTION: A METHOD FOR CLONING ACTIVE PROMOTERS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 19-AUG-1992
PRIOR APPLICATION DATA:
APPLICATION UDATA:
US 07/496,155
FILING DATE: 19-MAR-1990
PRIOR APPLICATION DATA:
APPLICATION UDATA:
APPLICATION UDATA:
US 07/044,077
FILING DATE: 29-APR-1987
PRIOR APPLICATION DATA:
APPLICATION UDATA:
APPLICATION UDATA:
APPLICATION DATA:
APPLICATION UDATA:
APPLICATION UDATA:
APPLICATION UDATA:
APPLICATION UDATA:
APPLICATION DATA:
APPLICATION UDABER: GB 86 10600
FILING DATE: 30-APR-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
LENGTH: 1781 base pairs
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: REED, GRANT E.
REGISTRATION NUMBER: 41,264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/932,485
FILING DATE: 19-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 1716.008000G
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: bo
                                                                                                         STREET: 1100 New CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: k
TOPOLOGY: both
                                                                                      COUNTRY:
                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0:
FILING DATE: 16-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1031 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                  20005
                                                                                                                                                      E: Sterne, Kessler, Goldstein & Fox P.L.L.C 1100 New York Avenue, Suite 600
                                                                                      U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91.3
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/389,564B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1781
7
```

```
RESULT 10
US-08-466-047B-21/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-08-389-564B-22 (1-1781)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-389-564B-22
                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. 6011147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/932,485
FILING DATE: 19-AUG-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/496,155
FILING DATE: 19-MAR-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/044,077
FILING DATE: 29-APR-1987
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 86 10600
ENTING DATE: 32-APR-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (202) 371-2540 INFORMATION FOR SEQ ID NO: 2
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1 0
                                                                                                                                                                                                                                                    APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Nevalainen, Kaisu Milja Helena
APPLICANT: Penttil, Merja E.
TITLE OF INVENTION: Fungal Promoters Active In The Presence
TITLE OF INVENTION: Of Glucose
                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: Sterne, K
STREET: 1100 New Yor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLIANT AUTORNEY/AGENT INFORMATION:
ATTORNEY/AGENT INFORMATION:
REED, GRANT E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 41,264
REFERENCE/COCKET NUMBER: 17
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No.:
                                                                                                                                                   CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/389,564B FILING DATE: 16-FEB-1995 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: both
                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1031 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA
                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu
                                                                                                                                       D.C.
                                                                                                                                                                         E: Sterne, Kessler, Goldstein & Fox P.L.L.C
1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1781 base pairs
                                                                                                                    U.S.A.
    PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91.3
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                   3
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41,264
4ER: 1716.008000G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches:
Conservative:
    Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            993
```

CURRENT APPLICATION DATA:

APPLICATION NUMBER:

US/08/466,047B

SOFTWARE:

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                US-08-466-047B-22/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-08-466-047B-21 (1-1781)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-466-047B-21
                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
ZIP: 20005
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
                                                                                                                                                    APPLICANT: Onnels, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Nevalainen, Kaisu Milja Helena
APPLICANT: Penttil, Merja E.
TITLE OF INVENTION: Fungal promoters Active In The Presence
TITLE OF INVENTION: Of Glucose
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                              tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: GB 86 10600
FILING DATE: 30-APR-1986
ATTORNEY/AGENT INFORMATION:
NAME: REED, GRANT E.
REGISTRATION NUMBER: 41.264
REGISTRATION NUMBER: 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: by MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 17
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/044,077
FILING DATE: 29-APR-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/389,564
FILING DATE: 16-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                     CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 19-MA
                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 07/932,564 FILING DATE: 19-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                            1031 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2, Application US/08466047B
6011147
                                                                                                                    D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1781 base pairs
                                                                                                    U.S.A.
                                                                                                                                                                                                                                                                                      Nakari, Tiina H.
Onnela, Maija-Leena
Ilm n, Marja H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      poth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (202) 371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-MAR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91.3
42.00
84.62*
53.85*
51.22*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/496,155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1716.008000H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1781
7
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
US-08-389-564B-18/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-08-466-047B-22 (1-1781)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-466-047B-22
                                                                                                                                                                                                                                                                                                                                                        Patent No.
                                                                                                                                                                                                                                                                                                                                                          Sequence 18, Application US/083895648 Patent No. 5989870
                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Ilm n, Marja H.
APPLICANT: Penttil , Merja E.
TITLE OF INVENTION: A METHOD FOR CLONING ACTIVE PROMOTERS
NUMBER OF SEQUENCES: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (202) 371-2540 INFORMATION FOR SEQ ID NO: 2
                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US 08/389,564
                                                                                                                                                                                     ADDRESSEE: Sterne, K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 41,264
REFERENCE/DOCKET NUMBER: 17
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371,2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 30-APR-1986 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 07/044,077
FILING DATE: 29-APR-1987
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 86 10600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 19-AUG-
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA: APPLICATION NUMBER: US,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 19-MAR-1990 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
...
COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release ".
                                                                                             COUNTRY: U
                                                                                                                                   CITY: Washington STATE: D.C.
                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 16-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                              1031 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REED,
                                                                                                                                                                  E: Sterne, Kessler, G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1781 base pairs
                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PatentIn Release #1.0, Version #1.25
 PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRANT E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91.3
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                  Kessler, Goldstein & Fox P.L.L.C.
ork Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US 07/932,564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/466,047B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 07/496,155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels:
   Version #1.25
```

```
RESULT 13
US-09-066-597-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-08-389-564B-18 (1-2218)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: CDNA US-08-389-564B-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/09066597 Patent No. 6001595
                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (202) 371-25.
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                  NERAL INFORMATION.

APPLICANT: Ilm n, Marja
APPLICANT: Onnela, Maija-Leena
APPLICANT: Penttil Merja
APPLICANT: Penttil Merja
TITLE OF INVENTION: New Promoters and Uses Thereof
TITLE OF SECUENCES: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 86 10600
FILING DATE: 30-APR-1986
ATTORNEY/AGENT INFORMATION:
NAME: REED, GRANT E.
REGISTRATION NUMBER: 41,264
             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/09/066,597
FILING DATE: Herewith
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 17
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Sterne, Kessler, Goldstein & Fox P.L.L.C. STREET: 1100 New York Avenue, NW, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 2218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 07 FILING DATE: 19-AUG-1992
                                                                                                                                                                                                                                    STREET: 1100 New CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 07/496,155 FILING DATE: 19-MAR-1990
                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/389,564B FILING DATE: 16-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1466 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                   20005-3934
                                                                                                                                                                                                                         g
                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-APR-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 07/044,077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US 07/932,485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1716.008000G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2218
7
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-466-047B-18/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-09-066-597-1 (1-2218)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-066-597-1
               PRIOR APPLICATION DATA:
PRIOR APPLICATION UNBER: PCT/F197/00
APPLICATION NUMBER: PCT/F197/00
FILING DATE: 01-DEC-1997
ATTORNEY/AGENT INFORMATION:
NAME: Kim, Judith U.
40,679
                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 18, Application US/08466047B Patent No. 6011147
                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Nevalainen, Kaisu Milja Helena
APPLICANT: Nevalainen, Kaisu Milja Helena
APPLICANT: Penttil, Merja E.
TITLE OF INVENTION: Of Glucose
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (202) 371-2600
TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REGISTRATION NUMBER: 40,679
REFERENCE/DOCKET NUMBER: 17
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US 08/980,061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 29-NOV-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                          STREET: 1100 New CITY: Washington
CLASSIFICATION:
                                                                                                                                                              COUNTRY:
                                                                                                                                                                                STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                            ADDRESSEE: Sterne, Kessler, Goldstein & Fox P.L.L.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1466 TITAGCCACTIGATIGTACAATTATTAGCCGCTGGTATA 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                               1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2218 base pairs
                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US 60/032,156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/F197/00742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 60/040,140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1716.0660004/MAC/JUK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative:
                                                                Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2218
```

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/389,564

FILING DATE:

16-FEB-1995

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-389-564B-20/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-08-466-047B-18 (1-2218)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No.
                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Ilm n, Marja H.
APPLICANT: Penttil, Merja E.
TITLE OF INVENTION: A METHOD FOR CLONING ACTIVE PROMOTERS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: GB 86 106
FILING DATE: 30-APR-1986
ATTORNEY/AGENT INFORMATION:
NAME: REED, GRANT E
REGISTRATION NUMBER: 11,264
REFERENCE/DOCKET NUMBER: 1716
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (202) 371-26
TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO:
                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/389,564B
FILING DATE: 16-FEB-1995
                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 2218 base pair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US OF FILING DATE: 29-APR-1987 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/496,155
FILING DATE: 19-MAR-1990
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                     STREET: 1100 New CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: FILING DATE: 19-AUC
                     CLASSIFICATION:
                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20, Application US/08389564B
5. 5989870
                                                                                                                                                                                        20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic acid
DEDNESS: both
                                                                                                                                                                                                                                                          E: Sterne, Kessler, Goldstein & Fox P.L.L.C 1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2218 base pairs
                                                                                                                                                                                                    U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hoth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
42.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US 07/044,077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GB 86 10600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 07/932,564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1716.008000H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
```

```
RESULT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-08-389-564B-20 (1-2266)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-466-047B-20/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-389-564B-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: GB 86 10600
FILING DATE: 30-APR-1986
ATTORNEY/AGENT INFORMATION:
NAME: REED, GRANT E.
REGISTRATION NUMBER: 41,264
REFERENCE/DOCKET NUMBER: 1716.008
TELEPHONE: (202) 371-2540
INFORMATION FOR SEQ ID NO: 20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 6011147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 07/
FILING DATE: 19-AUG-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/
FILING DATE: 19-MAR-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/
FILING DATE: 29-APR-1987
PRIOR APPLICATION DATA:
                                                                       ZIP: 20005

ZIP: 20005

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/466,047B
FILING DATE: 06-JUN-1995
FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Nakari, Tiina H.
APPLICANT: Onnela, Maija-Leena
APPLICANT: Ilm n, Marja H.
APPLICANT: Nevalainen, Kaisu Milja Helena
APPLICANT: Penttil , Merja E.
TITLE OF INVENTION: Fungal Promoters Active In
TITLE OF INVENTION: Of Glucose
NUMBER OF SEQUENCES: 34
                CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                             CITY: Washington
STATE: D.C.
                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Sterne, Kessler, Goldstein & Fox P.L.L.C
STREET: 1100 New York Avenue, Suite 600
                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1516 TITAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08466047B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2266 base pairs
                                                                                                                                                                                                                                                            U.S.A.
JMBER: US 08/389,564
16-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UMBER: US 07/496,155
19-MAR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 07/044,077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US 07/932,485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1716.008000G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                     The Presence
```

PRIOR APPLICATION DATA: APPLICATION NUMBER:

19-AUG-1992

US 07/932,564

```
APPLICANT: MORTYA, TATSUKI
APPLICANT: MORTYA, TATSUKI
APPLICANT: MORTYA, TATSUKI
APPLICANT: SUMIDA, NAOMI
APPLICANT: SUMIDA, NAOMI
I APPLICANT: SUMIDA, NAOMI
I TITLE OF INVENTION: REGULATORY SEQUENCE OF CELLULASE CBh1 GENES ORIGINATING
TITLE OF INVENTION: IN TRICHODERMA VIRIDE AND SYSTEM FOR MASS-PRODUCING
TITLE OF INVENTION: PROTEINS OR PEPTIDES THEREWITH
FILE REFERENCE: 99-0266*/LC(WMC)/00144
CCURRENT APPLICATION NUMBER: US/09/254,733
CURRENT FILING DATE: 1999-05-07
INMBER OF SEQ ID NOS: 52
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 1
LENGTH: 4176
TYPE: DNA
TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18) x US-08-466-047B-20 (1-2266)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-254-733-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JS-08-466-047B-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/09254733 Patent No. 6277596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: GB 86 10600 FILING DATE: 30-APR-1986 ATTORNEY/AGENT INFORMATION: NAME: REED, GRANT E. REGISTRATION NUMBER: 41,264 REFERENCE/DOCKET NUMBER: 1716.008 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                             FEATURE: NAME/KEY: sig_peptide LOCATION: (1438)..(1488)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO: 1
                                                                                                            NAME/KEY: CDS
LOCATION: (1438)..(1488)
                                                                                                                                                                                                                                                                                                                                                 ORGANISM: TRICHODERMA VIRIDE MC300-1
NAME/KEY: mat_peptide
LOCATION: (1489)..(3108)
                                                                                                                                                                                                    FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 2266 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR DATE: 19-MAR-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: both
TOPOLOGY: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 07/044,077 FILING DATE: 29-APR-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1516 TTTAGCCACTTGATTGTACAATTATTAGCCGCTGGTATA 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (202) 371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          124
42.00
84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 07/496,155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1716.008000H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2266
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-374-077C-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-2 (1-18) x US-09-254-733-1 (1-4176)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-254-733-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08374077C Patent No. 6027912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:

APPLICANT: Hall, Linda M.

APPLICANT: Ren, Dejian

APPLICANT: Zheng, Wei

APPLICANT: Dubald, Manuel Marcel Paul

TITLE OF INVENTION: Genes Encoding an Invertebrate Alphal

TITLE OF INVENTION: Calcium Channel Subunit

NUMBER OF SEQUENCES: 57

CORRESPONDENCE ADDRESS:

ADDRESSEE: BURNS, DOANE, SWECKER & MATHIS, LLP
                                                                                                                                                                                                                                                             COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Release #1.0, V.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/374,077C
FILING DATE: 19-JAN-1995
CLASSIFICATION: 435
                                                                                                            TELEFAX: 703-836-2021
INFORMATION FOR SEQ ID NO:
                                                                                                                                               ATTORNEY/AGENT INFORMATION:

NAME: McGowan, Malcolm M.

REGISTRATION NUMBER: 39,300

REFERENCE/DOCKET NUMBER: 0226

TELECOMMUNICATION INFORMATION:

TELEPHONE: 703-836-6620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
NAME/KEY: CDS
LOCATION: (1489)..(1898)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: CDS
LOCATION: (2725)..(3108)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: CDS
LOCATION: (1966)..(2662)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (2663) .. (2724)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: intron
LOCATION: (1899)..(1965)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 22314-3187
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 8075 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No : :
   MOLECULE TYPE:
                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Alexandria
STATE: VA
                     TOPOLOGY:
                                                       TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 708 TITAGCCACTIAATTGTACAATTATTAGCCGCTGGTATA 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeu 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           699 Prince Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                     linea
DNA (genomic)
                                 single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84.62%
53.85%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
00
                                                                                                                                                                                                                                                                                                  US/08/374,077C
                                                                                                                                                                                        022650-264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                        Version #1.30
```

```
Percent Similarity:
Best Local Similarity:
                                                                                                   Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-895-590-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18) x US-08-374-077C-1 (1-8075)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                       US-08-895-590-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-374-077C-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No. 6207410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 703-836-2021
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                MOLECULE TYPE:
FEATURE:
NAME/KEY: CDS
LOCATION: 157
                                                                                                                                                                                                                                                                                                                                   TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: lines-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hall, Linda M.
APPLICANT: Ren, Dejian
APPLICANT: Zheng, Wei
APPLICANT: Dubald, Wei
TITLE OF INVENTION: Genes Encoding an Insect Calcium Channel
NUMBER OF SEQUENCES: 101
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/0
FILING DATE: 19-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 02
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-836-6620
TELEFAX: 703-836-2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/895,590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

COPTUDE: DECEMBER DECEMBE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: McGowan, Malcolm M. REGISTRATION NUMBER: 39,300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 22314-3187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: BURNS, DOANE, SWECKER & MATHIS, LLP
699 Prince Street
                                                                                                                                                                                                                                CDS
157..7704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
157..7704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ication US/08895590
                                                                                                                                                                                                                                                                                                                             DNA (genomic)
624
42.00
83.33%
44.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     624
42.00
83.33%
44.44%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/374,888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 022650-263
                                                              Length:
Matches:
   Mismatches:
                                  Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
                                                                                             8075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8075
8
7
```

```
US-10-081-935-2 (1-18) x US-09-539-879A-1 (1-8075)
                                                           Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                       Score:
                                                                                                                                          Pred. No.:
                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                  US-09-539-879A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 20
US-09-539-879A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-2 (1-18) x US-08-895-590-1 (1-8075)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/09539879A Patent No. 6436627 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: 703-836-6620
TELEFAX: 703-836-2021
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                              MOLECULE TYPE: DNA (genomic) FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/111,865
FILING DATE: <UNKNOWN>
APPLICATION NUMBER: US 08/374,077
FILING DATE: 19-JAN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 22314-3187
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ren, Dejian
Zheng, Wei
Dubald, Manuel Marcel Paul
TITLE OF INVENTION: Genes Encoding an Invertebrate Alphal
Calcium Channel Subunit
                                                                                                                                                                                                                  SEQUENCE DESCRIPTION: SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: BURNS, DOANE, SWECKER & MATHIS, LLP
STREET: 699 Prince Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1917 TTGCGGTTTTCCACGGCGTTGTTGTCTCTTTTGGCCAGCGGCACCTGCAGCAGC 1864
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Hall, Linda M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/09/539,879A
FILING DATE: 31-Mar-2000
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                     NAME/KEY: CDS
LOCATION: 157..7704
                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: McGowan, Malcolm M.
REGISTRATION NUMBER: 39,300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE: VA
                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 8075 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Alexandria
                                                     624
42.00
83.33%
44.44%
51.22%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51.22%
3
                                                                                             Length:
Matches:
Conservative:
                                                         Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     00
```

Ś

1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
  S
                                                                                        Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-056-489-33
                                          US-10-081-935-2 (1-18) x US-09-252-991A-9137 (1-528)
                                                                                                                            Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                             Alignment Scores Pred. No.:
                                                                                                                                                                                                                                                            ; ORGANISM: Pseudomonas aeruginosa US-09-252-991A-9137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-252-991A-9137/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-2 (1-18) x US-09-058-489-33 (1-8096)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: DNA
; ORGANISM: Human
US-09-058-489-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 9137, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 33
LENGTH: 8096
                                                                                                                                                                                                                                                                                                                     SEQ ID NO 9137
LENGTH: 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 33, Application US/09058489 Patent No. 6103886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Lahn, Bruce
APPLICANT: Page, David
TITLE OF INVENTION: Genes in the No. 6103886-Recombining Region
TITLE OF INVENTION: the Y Chromosome
FILE REFERENCE: WHI97-08pA
CURRENT APPLICATION NUMBER: US/09/058,489
CURRENT FILING DATE: 1998-04-10
EARLIER APPLICATION NUMBER: 60/041,877
EARLIER FILING DATE: 1997-04-11
UNMBER OF SEQ ID NOS: 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/252,991A CURRENT FILING DATE: 1999-02-18 PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Whitehead Institute for Biomedical Research
                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1854 CTTCAACACAATCATGCCCTAGTTACTTTGGTAGCAGAAAACCTTGTAACT 1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGCGGTTTTCCACGGCGTTGTTGTCTCTTTTGGCCAGCGGCACCTGCAGCAGC 1864
                                                                                                       41.00
61.11%
44.44%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     626
42.00
70.59%
47.06%
51.22%
                                                                                                                                                                                             30.4
                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
                                                                                                       Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             o
f
```

```
GENERAL INFORMATION:

APPLICANT: Marc J. Rubenfield et al.

APPLICANT: MARC J. RUBENFIELD AND AMINO ACID SEQUENCES RELATING TO F.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO F.

TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

PILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: US/60/074,788

PRIOR FILING DATE: 1998-02-18

PRIOR FILING DATE: 1998-02-18

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

LENGTH: 975
                                                                                                      ; NAME/KEY: unsure
; LOCATION: (571)
; OTHER INFORMATION:
US-09-252-991A-15674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 24
US-09-252-991A-15674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION:
US-09-252-991A-15702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-252-991A-15702
    Percent Similarity:
                          score:
                                           Pred. No.:
                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-09-252-991A-15702 (1-972)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: MAIC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING:
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NO 15702
LENGTH: 972
TUDE: NUMBER: US 60/094,190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION: APPLICANT: Marc J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 15702, Approximately Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 15674, Application US/09252991A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: unsure
LOCATION: (669)
                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/09252991A
                                                                                                                           Identity of nucleotide at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66.1
41.00
72.22%
61.11%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Identity of nucleotide at the above locations are unknown.
  66.3
41.00
72.22
Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
                                                                                                                         the above locations are unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         972
11
2
5
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TO PSEUDOMONAS
```

```
APPLICANT: GOULD-OCT.

APPLICANT: Rate-11:

TITLE OF INVENTION: METHOD OF CLASSIFYING A THYROID CARCINOMA USING

TITLE OF INVENTION: DIFFERENTIAL GENE EXPRESSION

FILE REFERENCE: 15966-548

CURRENT APPLICATION NUMBER: US/09/552,322

CURRENT FILING DATE: 2000-04-19

PRIOR APPLICATION NUMBER: 60/130,123

PRIOR APPLICATION NUMBER: 60/130,23

PRIOR APPLICATION NUMBER: 60/130,23

PRIOR FILING DATE: 1999-04-20

PRIOR APPLICATION NUMBER: 60/193,203

PRIOR FILING DATE: 1999-04-20

INCOMPARE: PRIOR FILING DATE: 2000-03-30

NUMBER OF SEQ ID NOS: 63

SOFTWARE: Patentin Ver: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                    Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-8728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
Query Match:
                                                                                 US-09-552-322-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-552-322-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-2 (1-18) x US-09-252-991A-8728 (1-1056)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-252-991A-8728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-09-252-991A-15674 (1-975)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3, Application US/09552322 Patent No. 6436642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 8728, Application US/09252991A
Patent No. 6551795
GENERAL INFORMATION:
                                                                                                                                                            SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 8728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR EILING DATE: 1998-07-27
PRIOR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING
TITLE OF INVENTION: ARRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                           TYPE: DNA
ORGANISM: Murinae
                                                                                                                                       LENGTH: 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH: 1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGGGCGCCGCCCTGATCGCGCTCGTCGGCGCGGGGAGAGCATGGCG 106
                                                                                                gen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61.11%
50.00%
88.1
41.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41.00
61.11%
44.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50.00%
Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches:
1218
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PSEUDOMONAS
```

```
US-09-252-991A-15656
                                                                                                                                                                                        PATEBLE NO. WOLLING RELATION:
GENERAL INFORMATION:
APPLICANT: MARC J. Rubenfield et al.
APPLICANT: MARC J. Rubenfield et al.
APPLICANT: MARC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMD AMINO ACID SEQUENCES RELATING TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 28
US-09-252-991A-15656/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Rest Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-2 (1-18) x US-09-328-352-1918 (1-1230)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Acinetobacter baumannii US-09-328-352-1918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-328-352-1918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x US-09-552-322-3 (1-1218)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                          PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15656
LENGTH: 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 1918
LENGTH: 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1918, Application US/09328352
Patent No. 6562958
GENERAL INFORMATION:
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 15656, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
                NAME/KEY: unsure.
LOCATION: (415)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 8252
                                                                        TYPE: DNA
ORGANISM: Pseudomonas
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480 CTGCCTTTGAGCCACCAGCTCGTGCTTCTCCTGGCAATGGGTCTGGTCACAGCA 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTGCC 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerAla 18
                Identity of nucleotide at the above locations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66.67%
44.44%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89.2
41.00
63.64%
45.45%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative: Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4000
                are unknown.
                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                             PSEUDOMONAS
```

```
GENERAL INCORNATION:
GENERAL INCORNATION:
APPLICANT: Marc J. Rubenfield et al.
ITILE OF INVENTION: MUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO P
ITILE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-07-27
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
SEQ ID NO 9057
LENGTH: 1710
TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-9057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                           US-09-252-991A-9057/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-081-935-2 (1-18) x US-09-252-991A-9220 (1-1566)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-252-991A-9220/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-09-252-991A-15656 (1-1485)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-9220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: MATC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 9220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 9220, Application US/09252991A Patent No. 6551795
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                      Sequence 9057, Application US/09252991A Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                933 ATGCAGGGCGCCGCCCCCGATCGCGCTCGTCGGCGCGGGGAGAGCATGGCG 880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
41.00
61.11%
44.44%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         113
41.00
72.22%
61.11%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches: Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1566
8
3
7
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1485
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                  926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18
                                                                                                                                                                                                                                                                                                TO PSEUDOMONAS
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 31
US-09-724-864-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-390-721-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x US-09-724-864-18 (1-2123)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS:
SOFTWARE: FASTSEQ for
SEQ ID NO 18
LENGTH: 2123
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-2 (1-18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-724-864-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                    SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09390721 Patent No. 6197591 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 18, Applica Patent No. 6380362 GENERAL INFORMATION:
                                                                                                                                                                          FILE REFERENCE: PC9944A
CURRENT APPLICATION NUMBER: US/09/390,721
CURRENT FILING DATE: 1999-09-07
EARLIER APPLICATION NUMBER: 60/100,134
EARLIER FILING DATE: 1998-09-14
NUMBER OF SEQ ID NOS: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Polynucleotides, polypeptides expressed TITLE OF INVENTION: by the polynucleotides and methods for the REFERENCE: 11000,1050U1 CURRENT APPLICATION NUMBER: US/09/724,864 CURRENT FILING DATE: 2000-11-28 PRIOR APPLICATION NUMBER: U.S. No. 6380362 60/171,678 PRIOR FILING DATE: 1999-12-23
                                                                                                                                                                                                                                                                                        APPLICANT: STUTZMAN-ENGWALL, KIM J.
APPLICANT: PRICE, BERDA S.
TITLE OF INVENTION: STREPTOMYCES AVERMITILIS REGULATORY GENES FOR INCREASED
TITLE OF INVENTION: AVERMECTIN PRODUCTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Watson, James O
APPLICANT: Murison, James
NAME/KEY: CDS
LOCATION: (1112)..(2317)
OTHER INFORMATION: aver1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Mouse
                                                                              ORGANISM: Streptomyces avermitilis
                                                                                                TYPE: DNA
                                                                FEATURE:
                                                                                                                      ENGTH: 5045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    870 CTGCCTTTGAGCCACCAGCTCGTGCTTCTCCTGGCAATGGGTCTGGTCACAGCA 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/09724864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              x US-09-252-991A-9057 (1-1710)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179
41.00
66.67%
44.44%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136
41.00
61.11%
44.44%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              James G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          their use
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (2314)..(3021)
; OTHER INFORMATION: aver2 ORF
US-09-390-721-3
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                             US-08-311-731A-132
                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-09-390-721-3 (1-5045)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-390-721-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-2 (1-18) x US-09-390-721-1 (1-5045)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-390-721-1
                                                Sequence 132, Application US/08311731A
Patent No. 6583266
GENERAL INFORMATION:
APPLICANT: MAITH, DOUGLAS
APPLICANT: MAIO, JEN-I
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES
TITLE OF INVENTION: RELATING TO MYCOBACTERIUM TUBERCULOSIS AND LAPRAE FOR
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
NUMBER OF SEQUENCES: 411
CORRESPONDENCE ADDRESS:
ADDRESSEE: WOLF, GREENFIELD & SACKS, P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: STUTZMAN-ENGWALL, KIM J.
APPLICANT: PRICE, BRENDA S.
APPLICANT: PRICE, BRENDA S.
TITLE OF INVENTION: STREPTOMYCES AVERMITILIS REGULATORY GENES FOR INCREASED TITLE OF INVENTION: AVERMECTIN PRODUCTION
FILE REFERENCE: PC9944A
CURRENT APPLICATION NUMBER: US/09/390,721
CURRENT APPLICATION NUMBER: 09/07
EARLIER APPLICATION NUMBER: 60/100,134
EARLIER APPLICATION NUMBER: 60/100,134
RUMBER OF SEQ ID NOS: 6
NUMBER OF SEQ ID NOS: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 3
LENGTH: 5045
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/09390721 Patent No. 6197591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Streptomyces avermitilis
                                                                                                                                                                                                                                                                                                                                    4382 CTGCAACTGACACACGCTTGCTGCACTTCGTCGAGGCGGGGCTGGCCGCC 4332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4382 CTGCAACTGACACCGCTTGCTGCACTTCGTCGAGGCGGGGCTGGCCGCC 4332
                                                                                                                                                                                                                                                                                                                                                                       1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T: 600 ATLANTIC AVENUE BOSTON
MASSACHUSETTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             537
41.00
70.59%
47.06%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       537
41.00
70.59%
47.06%
50.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
```

```
Alignment Scores:
                                                                       US-09-313-294A-2891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 35
US-09-313-294A-2891/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-2 (1-18) x US-08-311-731A-132 (1-36412)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-311-731A-132
                                                                                                                                                                                                                                  SOFTWARE: PER SEQ ID NO 2891 LENGTH: 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2891, Application US/09313294A Patent No. 6476212 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                    APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLECTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR FILE REPERENCE: PL-0017 US
CURRENT APPLICATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 1999-05-14
NUMBER OF SEQ ID NOS: 7600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 617/720-2441
INFORMATION FOR SEQ ID NO: 132:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: GATES, EDWARD R.
REGISTRATION NUMBER: 31,616
REFERENCE/DOCKET NUMBER: C004
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/720-3500
                                                                                        NAME/KEY: unsure
LOCATION: 138, 178
OTHER INFORMATION:
                                                                                                                                        FEATURE:
NAME/KEY: misc_feature
OTHER_INFORMATION: Incyte ID No. 6476212 700553448H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: D
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: MYCO
                                                                                                                                                                                             ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 02210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 36412 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: circular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8097 ACTCACGCCGTTCCGGCACTCATCGTCGCTGGGCTAAGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 SerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                        PERL Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MYCOBACTERIUM LEPRAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA (genomic)
                                                                                        р
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.63e+03
41.00
85.71%
57.14%
50.00%
23.6
                                                                                          ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/311,731A
                                                                                      ú
                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C0044/7125
Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36412
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8138
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                        US-09-512-342-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-2 (1-18) x US-09-252-991A-16275 (1-465)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-252-991A-16275/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-2 (1-18) x US-09-313-294A-2891 (1-304)
                                                                                Alignment Scores:
                                                                                                                ; ORGANISM: Cucumis sativus US-09-512-342-19
                                                                                                                                           SOFTWARE: PAC
SEQ ID NO 19
LENGTH: 504
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-16275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 16275, Application US/09252991A

Patent No. 6551795

GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1990-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER: OF SEQ ID NOS: 33142
                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: SATOH, SHINOBU
APPLICANT: MASUDA, SUSUMU
TITLE OF INVENTION: METHOD FOR PRODUCING FOREIGN POLYPEPTIDE IN PLANT
TITLE OF INVENTION: INTERCELLULAR FLUID
FILE REFERENCE: 081356/0142
CURRENT APPLICATION NUMBER: US/09/512,342
CURRENT FILING DATE: 2000-02-24
NUMBER OF SEQ ID NOS: 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 16275
LENGTH: 465
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                      Sequence 19, Appli
Patent No. 6388068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla 18
                                                                                                                                                                                            PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                     Application US/09512342
 44.8
40.00
68.75%
56.25%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40.5
40.00
75.00$
56.25$
48.78$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84.62%
69.23%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative: Mismatches: Indels:
               Mismatches:
                                 Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0 0 4 4 6 5
504
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0022
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-913-014A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-252-991A-3703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-2 (1-18) x US-09-512-342-19 (1-504)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-2 (1-18) x US-09-252-991A-3703 (1-669)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-252-991A-3703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3703, Application US/09252991A Patent No. 6551795 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS:
SEQ ID NO 3703
LENGTH: 669
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 7, Application US/08913014A Patent No. 6235878 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: ABRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196,136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR FILING DATE: 1999-07-27

PRIOR FILING DATE: 1999-07-27
                                                                                                                                                           COUNTRY: USA
ZIP: 02109
COMPUTER REALABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Pseudomonas aeruginosa
             COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASESEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION UNMEER: US/08/913,014A
FILING DATE: 04-SEP-1997
CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Nishi, Kazunori
APPLICANT: Hikichi, Yukiko
APPLICANT: Shintani, Yasushi
APPLICANT: Shintani, Yasushi
TITLE OF INVENTION: NOVEL FAS LIGAND-LIKE PROTEIN, ITS
TITLE OF INVENTION: PRODUCTION AND USE
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                        STREET: 130 Wa
CITY: Boston,
STATE: MA
                                                                                                                                                                                                                                                                                                                     ADDRESSEE: David G. Conlin, ADDRESSEE: DIKE, BRONSTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46 TICICITICGGTTTTCTTTTGTTGGTGAGTTTAGGCTTAGCTTCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58 CTCACCCTCCAGCACCTGCTGCTGGTACTGGTCGCCGTAGGCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 PheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAla
                                                                                                                                                                                                                                                                                                130 Water Street
                                                                                                                                                                  Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.3
40.00
62.50%
50.00%
48.78%
                                                                                                                                                                                                                                                                                                                       Esq.
ROBERTS & USHMAN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               006286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93
```

```
Sequence 9311, Application US/09252991A

Retent No. 6551795

GENERAL INFORMATION:

APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS

TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPPUTICS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 1999-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR FILING DATE: 1998-07-27

INUMBER OF SEQ ID NOS: 33142

SEQ ID NO 9911

CORGANISM: Pseudomonas aeruginosa

US-09-25-991A-991

CORGANISM: Pseudomonas aeruginosa
Search completed: November 13, 2003, 13:12:54 Job time : 526 secs
                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                  밁
                                                                                                                              US-10-081-935-2 (1-18) x US-09-252-991A-9931 (1-765)
                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 40
US-09-252-991A-9931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: Nucleic acid
STRANDENESS: Doubl
; TOPOLOGY: Linear
; MOLECULE TYPE: CDNA
US-08-913-014A-7
                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                  US-09-252-991A-9931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-2 (1-18) x US-08-913-014A-7 (1-717)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/JP97/
FILING DATE: July 17, 1997
ATTORNEY/AGENT INFORMATION:
NAME: David G. Conlin
REGISTRATION NUMBER: 27,026
REFERENCE/DOCKET NUMBER: 342/
TELECOMMUNICATION INFORMATION:
TELECHONE: 617-523-3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 617-523-6440
                                                           446 CAACGCAATCACTCGACCTTGACCTTGGCCAGCGCCGGCTTGGCTTCC 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 GlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSer 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Double
                                                                                                                                                               76.2
40.00
75.00%
50.00%
48.78%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70.2
40.00
76.47$
52.94$
48.78$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/JP97/02480
7, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               342/47694
                                                                                                                                                           Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                              Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      717
9
4
4
0
                                                                                                                                                             765
44
0
```

```
Command line parameters:

-MODEL=frame+_D2n.model -DEV=xlh
-O=/cgn2_1/USTO_11/USTO_21/US10081935/runat_04122003_134830_10487/app_query.fasta_1.391
-O=/cgn2_1/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/USTO_21/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
         EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                December 6, 2003, 01:54:48 ; Search time 1932 Seconds (without alignments) 2440.512 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22781392 seqs, 12152238056 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MQFSHALIALVAAGLASAQL......NVRASVGGIAAALLGLAAYL 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-081-935-4
1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                     em estro:

gb est1: *

gb est2: *

gb htc: *

gb htc: *

gb est3: *

gb est4: *
em_estfun: *
em_gss_inv:
em_gss_inv:
em_gss_inv:
em_gss_vrl:
em_gss_vrl:
em_gss_fun:
em_gss_man:
em_gss_man:
em_gss_man:
em_gss_no:
em_gss_pto:
em_gss_vrl:
em_gss_vrl:
em_gss_vrl:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_estba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_estpl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_esthum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7.0
```

## 29: gb\_gss2:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| 45           | 44         | 4.           | C 42                                        | .4.         | n<br>40    | יי            | . a  | 370         | ט נו       | n ie     |             | 2 2 2      | · ω        | 30          | 29             | 28             | 27          | 26            | 25             | 24             | 23             | 22            | 21        | 20          | c 19              | 18       | 17        | 16        | _         | c 14     |             | 12         |          |         | . 00      | . 7        | 6              | U              | 4.             | ω              | N                | L        | Result<br>No. |
|--------------|------------|--------------|---------------------------------------------|-------------|------------|---------------|------|-------------|------------|----------|-------------|------------|------------|-------------|----------------|----------------|-------------|---------------|----------------|----------------|----------------|---------------|-----------|-------------|-------------------|----------|-----------|-----------|-----------|----------|-------------|------------|----------|---------|-----------|------------|----------------|----------------|----------------|----------------|------------------|----------|---------------|
| σ            | 16         | 160.5        | σ,                                          | σ,          | ν.         | 1 6 4         | 7.   |             | 5          | 166      | 0           | 9          | 167        |             |                |                | σ           | 167           | σ              | 167            | 167            | 167           | 167       | 168         | 39                | 172.5    | _         | 181.5     | 184       | œ        | 19          | 202.5      | מ מ      | 382     | 99.       |            | lπ             | 809            | 4              | 701            | 706              | -        |               |
| 5            | 5          | 5            | 5                                           | 5           | ٦.         |               | 'n   | 'nσ         | ٠.         | 16.2     | . 6         | . 0        | •          | 6           | ٥,             | ٥,             | ٥.          | •             | Ġ              |                | 16.3           | ٥.            | ٥.        | •           | ٥.                | ٥.       | 7.        | 7.        | 8         |          | 8           | ٠.         | - :      | 37.3    | . 9       | 0          | ٠.             | 59.4           | ω.             | 8              |                  | 98.7     | 0.11          |
| 725          | 531        | 556          | 869                                         | 626         | 874        | 210           | 110  | 119         | 27.0       | 969      | 606         | 867        | 841        | 726         | 718            | 699            | 696         | 664           | 657            | 634            | 623            | 607           | 567       | 1038        | 612               | 640      | 701       | 688       | 731       | 952      | 553         | л с<br>6 4 | 110      | 419     | 538       | 602        | 395            | 401            | 395            | u              | 557              | 737      | Length        |
| 14           | 6          | 12           | 14                                          | <u>.</u>    | 1 1        | י נ           | 5    | <u>ا</u> د  | 4 6        | 1 1      | 12          | 14         | 14         | 13          | 13             | 13             | 13          | 13            | 13             | 13             |                | <u>1</u> 3    |           |             |                   |          |           | 12        |           |          |             | 2 5        |          | 1 [     |           |            |                | 10             |                |                | 10               |          | BG            |
| 445          | 1003       | 215          | 5800                                        | 5000        | א נפ<br>טע | 7155          | 0000 | 6441        |            | BU064561 |             |            | CD458964   |             |                |                |             |               |                | BU065834       |                |               | BM866206  | CNS05RMN    | BJ383609          | CD035585 | J         | ~l        | σ,        | CD458295 | <b>TO</b> ( | BMBAAAA    | . J      | 39      | · m       | BQ767421   | 10             | (D             | 25             | F25            | F252             | 511      | ID            |
| 44514 psHB01 | 1003 Porph | 72159 mgmv00 | ֓֞֝֝֝֝֝֓֞֝֝֝֓֓֓֓֓֝֝֓֓֓֟֝֝<br>֓֞֞֞֞֞֞֞֞֞֞֞֞֞ | SECTA FOR G | 100        | 4313 AU284313 | 9    | 64419 Fgr_4 | 60963 Fg09 | 19       | 68215 mgcs( | 58020 Fg08 | 58964 Fg08 | 64923 Fgr ( | 64737 Fgr 5 K1 | 66113 Fgr 9 G0 | 65008 Far 6 | 60530 Far-C 1 | 64409 Fgr 4 M1 | 65834 Far 8 KO | 66221 Fgr 9 K2 | 64230 Far 4 F | 66206 mgc | 350744 Teti | BJ383609 BJ383609 | ag .     | 72513 mgm | 72390 mgm | 66219 Far | 0 0      | 66040 mgC   |            | 22 69066 | Brook S | 67128 EBr | 67421 EBro | 51279 EST41853 | 52856 EST42011 | 51817 EST41907 | 51334 EST41859 | F252723 EST41998 | EST41836 | ription       |

## ALIGNMENTS

| REFERENCE                                                                                                                          | SOURCE<br>ORGANISM                        | VERSION<br>KEYWORDS            | ACCESSION                                                          | DEFINITION                                                        | rocus                                       | BF251103 | RESULT 1 |
|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------|----------|----------|
| Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes; Onygenales; mitosporic Onygenales; Coccidioides.  1 (bases 1 to 737) | Coccidioides immitis Coccidioides immitis | BF251103.1 GI:16931246<br>EST. | immitis cDNA clone CIAAC67 5' sequence, mRNA sequence.<br>BF251103 | EST418360 Coccidioides immitis spherule cDNA library Coccidioides | BF251103 737 bp mRNA linear EST 15-NOV-2001 |          |          |

```
S
                                                                                                                                                                                                               В
                                                                                                                                                                                                                              ઇ
                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
             á
                                   В
                                                 8
                                                                     밁
                                                                                   á
                                                                                                       B
                                                                                                                    ş
                                                                                                                                      밁
                                                                                                                                                        ঠ
                                                                                                                                                                             문
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                     용
                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
  밁
                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x BF251103
                                                                                                                                                                                                                                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides impublished
Contact: Malcolm J. Gardner
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville, MI
Tel: 301 838 319
Fax: 301 838 0208
               180
                                                                      519
                                                     161
                                                                                      141
                                                                                                        459
                                                                                                                         121
                                                                                                                                           399
                                                                                                                                                            101
                                                                                                                                                                              339
                                                                                                                                                                                                                 279
                                                                                                                                                                                                                                                  219
                                                                                                                                                                                                                                                                                      159
                                                                                                                                                                                             81
                                                                                                                                                                                                                                                                    41
                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                    ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                       lGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyrLeu 194
                                                                                                       CCTACCGCTGAGCCCACCGCTGAGCCGACTCATGAGCCCCACCGAGGAGCCCACTGCCGTC
                                                                                                                                         ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                           ProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAla-SerVa
                                                                     CCAACCGGCACTGGCGGTGTCCCCCACTGGCACCGGTTCCTTCACCGTCACTGGCAGA
                                                                               ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrVal
                                                                                                                                                                                                                          ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                   ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal
                                                                                                                                                                                                                                                  ACTCGCTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAGCTCCCAGGACAGATCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gardner@tigr.org.
Location/Qualifiers
1. .737
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xho1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /dev stage="spherule"
/lab_host="SOLR"
/clome lib="Coccidioides immitis :
/note="Vector: pBluescript SK(-);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIAAC67"
                                                                                                                                                                                                                                                                                                                                                                            9.2e-69
1010.00
99.49%
99.49%
98.73%
                                                                                                                                                                                                                                                                                                                                                                                                                                                           271
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                          168
                                                                                                                                                                                                                                                                                                                                                           (1-737)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immitis spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                                                                                                                                                                                                                                                                                                                                           737
194
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spherule
; Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA library"
EcoR1; Site_2
                                                                                | ThrGlyArg
                                                                                                                         140
                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ^ا2
                                                                    578
                                                                                      160
                                                                                                                                                           120
                                                                                                                                                                                                                                 80
                                   638
                                                                                                        518
                                                                                                                                          458
                                                                                                                                                                                                                338
                                                                                                                                                                                                                                                  278
                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                     218
                                                                                                                                                                                                                                                                                                       40
                                                                                                                                                                                                                                                                                                                       158
                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 2
BF252723
LOCUS
DEFINITION
                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                             Alignment S
Pred. No.:
                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                              á
                                                                 Ş
                                                                                                                                       S
                                                                                                                                                           밁
                                                                                                                                                                                             밁
á
                 밁
                                                    밁
                                                                                     밁
                                                                                                    ş
                                                                                                                       밁
                                                                                                                                                                           S
                                                                                                                                                                                                              á
                                                                                                                                                                                                                                US-10-081-935-4 (1-194) x BF252723
                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                      source
                 461
                                                    401
121
                                  101
                                                                                      341
                                                                                                                        281
                                                                                                                                                            221
                                                                                                                                                                                             161
                                                                   81
                                                                                                                                        41
                                                                                                      61
                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF252723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
ProThrAlaGluProThrAlaGluProThrHisGlu
                                                                                                                                                                                                                                                                                                                                110
                                                                                                                                                                                                                                                                                                                                þ
                                                                                                                                                                                                                                                 2.21e-45
706.00
100.00%
100.00%
69.01%
                                                                                                                                                                                                                                                                                                                                197
                                                                                                                                                                                                                                                                                                                                ი
```

```
Contact: Malcolm J. Gardner
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Coccidioides immitis
Coccidioides immitis
Coccidioides immitis
Eukaryota; Fungi, Ascomycota; Pezizomycotina; Eurotiomycetes;
Eukaryota; Fungi, Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 557)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF252723 ST bp mRNA EST419986 Coccidioides immitis spherule immitis cDNA clone CIABA21 5' sequence,
GACCAGTGCTCCAAGGCCGGTGTCCCAATTGACATCCCACCAGTTGACACCACCGCCGCT
                                                                                      AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                                                                                                                     CCTTGCGTTGAGGAGGCCTGCCCCTCTCGACGCCCGTATCTCCGTCTCCAACATCGTCGTT
                                                                                                                                                       ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                         ACTOGOTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAGCTCCCAGGACAGATCACT
                                                                                                                                                                                                                         ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                                             CCAGACATCCCACCTTGCGCTCTCAACTGCTTCGTTGAGGCTCTCGGCAACGATGGCTGC
                                                                                                                                                                                                                                                                                              ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="CIABA21"
/dev stage="spherule"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis (
/note="Vector: pBluescript SK(-);
Xho1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIABA21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117
                                                                                                                                                                                                                                                                                                                                                                                                                   (1-557)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      죵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A linear EST
e cDNA library Co
, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   557
132
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spherule; Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spherule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA library" EcoR1; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA library
                                  120
                                                                                                  100
 520
                                                                    460
                                                                                                                                                                     80
                                                                                                                                     400
                                                                                                                                                                                                     340
                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                20
```

밁

COMMENT

EST 15-NOV-2001

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
BF251334
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-4 (1-194) x BF251334 (1-531)
                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NO . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                     377
                                                                                                                                 317
                                                                                                                                                                                                                                                         197
        437
                                     101
                                                                                                                                                                                            257
                                                                                                                                                                                                                                                                                                                         137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    521
                                                                                                  81
                                                                                                                                                             61
                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                     1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Coccidioides immitis
Coccidioides immitis
Coccidioides immitis
Eukaryota, Fungi, Ascomycota, Pezizomycotina, Eurotiomycetes,
Onygenales, mitosporic Onygenales, Coccidioides.
1 (bases 1 to 531)
Gardner, M.J. and Kirkland, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF251334.1 GI:16931477
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF251334 531 bp mRNA EST418594 Coccidioides immitis spherule immitis cDNA clone CIAAF68 5' sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Generation of ESTs from
                                                                 ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                             ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                                           ProAsplleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                       ProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGlu 120
                                                                                                                                                                                            ACTCGCTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAGCTCCCAGGACAGATCACT
                                                                                                                                                                                                                                                        CCAGACATCCCACCTTGCGCTCAACTGCTTCGTTGAGGCTCTCGGCAACGATGGCTGC
                                                                                                                                                                                                                                                                                                                      ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTGCCCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTGCGTTGAGGAGGCCTGCCCTCTCGACGCCCGTATCTCCGTCTCCAACATCGTCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 838 3519
301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /dev stage="spherule"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
Xho1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Coccidioides immitis"
/mol_type="mRNA"
/db xref="taxon:5501"
/clone="CIAAF68"
                                                                                                                                                                                                                                                                                                                                                                                                                  5.11e-45
701.00
100.00%
100.00%
68.52%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and Kirkland, T.
ESTs from Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear EST 15-NOV-20 cDNA library Coccidioides mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                  531
131
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            spherule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cDNA library
                                                                                               100
                                                                                                                              376
                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                      196
      496
                                                                 436
                                                                                                                                                             80
                                                                                                                                                                                         316
                                                                                                                                                                                                                                                        256
                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
BF251817
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                문
                                                         Ś
                                                                                               밁
                                                                                                                      Ś
                                                                                                                                                          밁
                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-4 (1-194) x BF251817 (1-395)
                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                242
                                                                                               182
                                                                                                                           128
                                                                                                                                                          122
                                                                                                                                                                          108 GluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluProThrAla 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 ProThrAlaGluProThrAlaGluProThrHis
168 GluPheProGlyAlaGlySerAsnValArgAlaSerValGlyGlyIleAlaAlaAlaLeu
                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                       88 ValProIleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAla 107
                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes; Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 395)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BF251817
395 bp mRNA
EST419079 Coccidioides immitis spherule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Coccidioides immitis
Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF251817.1 GI:16931960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immitis cDNA clone CIAAM80 5' sequence, mRNA sequence.
                                               ValProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrProAla
                                                                                            GAGCCGACTCATGAGCCCACCGAGGAGCCCACTGTCGTCCCAACCGGCACTGGCGGTGGT
                                                                                                               GluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGly 147
                                                                                                                                                                                                                       GTCCCAATTGACATCCCACCAGTTGACACCACCGCCGCTCCCGAGCCATCCGAGACCGCT
                                                                                                                                                                                                                                                                                                      ProLeuAspAlaArgIleSerValSerAsnIleValValAspGlnCysSerLysAlaGly
                                                                                                                                                          GAGCCCACCGCTGAGCCAACCGAGGAGCCCACTGCCGAGCCTACCGCTGAGCCCACCGCT
                                                                                                                                                                                                                                                                                     CCTCTCGACGCCCGTATCTCCGTCTCCAACATCGTCGTTGACCAGTGCTCCAAGGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="spherule"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIAAM80"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                6.62e-41
646.00
98.43%
98.43%
63.15%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear EST 15-NOV-20 cDNA library Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                395
125
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             spherule cDNA library
```

<sup>ا</sup>2

밁 Ş 밁 ş 밁 ş В ঠ 밁 ঠ

밁 Ş

187

167

241

301

181

121

밁 Ş 밁

EST 15-NOV-2001

cDNA library

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
BF252856
LOCUS
                                                                                                                                                                                                                                                                                      US-10-081-935-4 (1-194) x BF252856 (1-401)
                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               302
   299
                                                         239
                                                                                                                  179
                                                                                                                                                                        119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           362
                            81
                                                                                  13
                                                                                                                                           41
                                                                                                                                                                                                   21
                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BF252856
401 bp mRNA linear EST 15-NOV-2001 EST420119 Coccidioides immitis spherule cDNA library Coccidioides immitis cDNA clone CIABB70 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
Contact: Malcolm J. Gardner
Contact: Malcolm J. Gardner
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Coccidioides immitis
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 401)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tel: 301 838 3519 Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF252856.1 GI:16932999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF252856
GACCAGTGCTCCAAGGCCGGTGTCCCCAATTGACATCCCACCAGTTGACACCACCGCCGCT
                AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla 100
                                                      ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                     ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                             CTCGGGCTCGCTGCCTACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LeuGlyLeuAlaAlaTyrLeu 194
                                                                                                               ACTCGCTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAGCTCCCAGGACAGATCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /dev_stage="spherule"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
Xho1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Coccidioides immitis"
/mol_type="mRNA"
/db xref="taxon:5501"
/clone="CIABB70"
                                                                                                                                                                                                                                                                                                                   5.86e-38
608.00
100.00%
100.00%
59.43%
                                                                                                                                                                                                                                                                                                                                                                                                                                                   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         382
                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   86 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3
                                                                                                                                                                                                                                                                                                                   401
114
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                  80
                                                                                                                                          60
                                                                                                                                                                       178
                                                                                                                                                                                                40
                                                                                                                                                                                                                              118
                                                      298
                                                                                                               238
                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 6
BF251279
LOCUS
DEFINITION
                                                                                                       Ś
                                                                                                                                        밁
                                                                                                                                                                    Ś
                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                   Ş
                                                á
                                                                                  밁
                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                US-10-081-935-4 (1-194) x BF251279
                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                         382
                                                                               322
                                                                                                                                        262
                                                                                                                                                                                                202
                                                                                                                                                                                                                                                         142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101
                                                                                                          61
                                                   18
                                                                                                                                                                    41
                                                                                                                                                                                                                           21
                                                                                                                                                                                                                                                                                   هبو
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Coccidioides immitis
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 395)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BF251279 395 bp mRNA linear EST 15-NOV-20
EST418539 Coccidioides immitis spherule cDNA library Coccidioides
immitis cDNA clone CIAAF11 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9712 Medical Center Drive, Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Department of Eukaryotic Genomics
The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF251279.1 GI:16931422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BF251279
                        AspGlnCysSer
                                                                                                                                                                                                               ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProGluProSerGluThrAlaGluProThrAlaGluProThr 114
                                                                                                ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                      ThrargLeuThraspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                        ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTGCCCAGCTC
                                                                                                                                                                                                                                                                        MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                        ACTCGCTTGACCGACTTCAAGTGCCACTGCTCCAAGCCTGAGCTCCCAGGACAGATCACT
                                                                                                                                                                                                CCAGACATCCCACCTTGCGCTCTCAACTGCTTCGTTGAGGCTCTCGGCAACGATGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIAAF11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="spherule"
/lab_host="SOLR"
/clone lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
                                                                                                                                                                                                                                                                                                                                            8.03e-26
451.00
100.00%
100.00%
44.09%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133
                                                    84
                         393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                (1-395)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78
                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MD 20850, USA
                                                                                                                                                                                                                                                                                                                                           395
0
0
```

밁 S 밁 á 밁 Ś 밁 ક 멍 ş

80

60 321

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BQ767421
LOCUS
 á
                                   밁
                                                                Ś
                                                                                                    밁
                                                                                                                                   á
                                                                                                                                                                     밁
                                                                                                                                                                                                       ક
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                             US-10-081-935-4 (1-194) x BQ767421 (1-602)
                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                    165
                                                                                                                                                                        105
                                                                                                                                      41
   1.8
                                                                  61
                                                                                                                                                                                                       21
                                                                                                                                                                                                                                           45
                                                                                                                                                                                                                                                                             سو
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome Dynamics/Computational Biology Scottish Crop Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Waugh R, Marshall DF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 602)
Hedley, P., Liu, H., Caldwell, D., McCallum, N., Mudie, S., Rammay, L., Machray, G., Marshall, D.F. M. and Waugh, R.
Development of Barley Transcriptome Resources
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BQ767421.1 GI:21975895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EBro08_SQ008_I22_R root, 3 week Hordeum vulgare subsp. vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BQ767421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hordeum vulgare subsp. vulgare
                                                                                                                                                                                                                                     MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu 20
                                                                                                                                                                   CCGATGTGCCGGCTGCTCGCTGAGCTGCTTCCTCTCTGCCTTGCAGAGTGATGGTTGC
                                                  ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                  TCCGAGCTGCTCGACTTCAACTGCCACTGCCAGAAGCCCGAGCTCGTGAGCAGCATCACT
                                                                                                                           ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr 60
                                                                                                                                                                                            ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                CCTTGTGTTCAGAAAGCCTGCGAGGTCAAGGACCAAATCTCCGTCTCCAACGCCGTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rgowrie, Dundee, DD2 5DA,
00 44 1382 562731
00 44 1382 562426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               est@scri.sari.ac.uk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Non-increally editionally cloned into pSPORTI. Non-normalised library, directionally cloned into pSPORTI. Derived from roots of 3 week old drought stressed barley plants. Developed as part of the barley transcriptome resources of BBSRC/SEERAD funded cereal IGF (Investigating Gene Function) project."

251 c 129 g 122 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EBro08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="EBro08 SQ008 I22"
/tissue_type="Toot"
/dev_stage="3 week"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mo1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cultivar="Optic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Hordeum vulgare"
                                                                                                                                                                                                                                                                                                                                            1.22e-22
412.50
59.89%
46.15%
40.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              xref="taxon:112509"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lib="root, 3 week, drought-stressed,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             602 bp
3 week,
                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scotland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         p mRNA linear EST 26-JUL-
k, drought-stressed, cv Optic, EE
cDNA clone EBro08_SQ008_I22 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            subsp. vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     덪
                                                                                                                                                                                                                                                                                                                                              602
84
25
56
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 26-JUL-2002
V Optic, EBro08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cv Optic,
                                284
                                                                80
                                                                                                  224
                                                                                                                                                                     164
                                                                                                                                                                                                                                       104
            Alignment Scores:
Pred. No.:
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
BQ767128
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                285 GGCCAGTGCTCCGCCGGCCACCCCATCTCGATTCCCCCCATCGAGACCAGCGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   164 SerThr 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144 ThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArgProThrAla 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; En
Spermatophyta; Magnoliophyta; Liliopsida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BQ767128 538 bp mRNA linear EST 26-JUL-2002 EBro08_SQ008_E05_R root, 3 week, drought-stressed, cv Optic, EBro08 Hordeum vulgare subsp. vulgare cDNA clone EBro08_SQ008_E05 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genome Dynamics/Computational Bic
Scottish Crop Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hedley,P., Liu,H., Caldwell,D., McCallum,N., Mudie,S., Ramsay,L., Machray,G., Marshall,D.F.M. and Waugh,R. Development of Barley Transcriptome Resources
                                                                                                                                                                                                                                                                                                                                                                                              Invergowrie, Dundee, DI
Tel: 00 44 1382 562731
Fax: 00 44 1382 562426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Waugh R, Marshall DF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BQ767128.1 GI:21975602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCACCGCCTCCACCAGCGAGAGCTCCAGCGCCGTTGAGTCCTCCTCCTCCTCCGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProThrGly-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTCCTCCGGTACTGCCACCTCCACCCCGCTGACGACCTACCGGCTCAGCCACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTACC 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCAGCGCCTCCAAGGCCTCCAGCACCTCGAGCTCCGCCCCCGCTGAGACCAGCGCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 538)
                 91
                                                                                                                                                                                                                                                                                                                                                         est@scri.sari.ac.uk.
Location/Qualifiers
                 a
                                                                                                                                                                                 /db_xref="taxon:112509"
/c1one="EBro08 SQ008 E05"
/tissue_type="root"
/dev_stage="3 week"
/lab_host="DH108"
           /note="Vector: pSPORT1; Site_1: Sal I; Site_2: Not I; Non-normalised library, directionally cloned into pSPORT1. Derived from rocte of 3 week old drought stressed barley plants. Developed as part of the barley transcriptome resources of BBSRC/SEERAD funded cereal IGF (Investigating Gene Function) project."
                                                                                                                                                 /clone_lib="root, 3 week, drought-stressed,
EBro08"
                                                                                                                                                                                                                                                                                /mol_type="mRNA"
/cultivar="Optic"
                                                                                                                                                                                                                                                                                                                     organism="Hordeum vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                    DD2 SDA,
                                                                                                                                                                                                                                                                                                                                                                                                                                    Scotland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biology
                                                                                                                                                                                                                                                                                                                     subsp. vulgare'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Poales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Poaceae;
                                                                                                                                                                 cv Optic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      404
```

1.09e-21 399.50

Length: Matches:

```
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                RESULT 9
BQ761304
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-4 (1-194) x BQ767128
                                                                                                                                                                                                                                                                                                                                    DEFINITION
                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176
                                                                                                                                                                                                                                                                                                                                                                                                      503
                                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                                                                                                                                                                       452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56
                                                             Contact: Waugh R, Marshall DF
Genome Dynamics/Computational Biology
Scottish Crop Research Institute
Invergowrie, Dundee, DD2 5DA, Scotland
Tel: 00 44 1382 562731
Fax: 00 44 1382 562426
                                                                                                                                                     i (bases 1 to 419)
Hedley, P., Liu, H., Caldwell, D., McCallum, N., Mudie,
Ramsay, L., Machray, G., Marshall, D.F.M. and Waugh, R.
Development of Barley Transcriptome Resources
                                                                                                                                                                                                     Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooidea; Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                  BQ761304
BQ761304.1
                                                                                                                                                                                                                                                                                                                       BQ761304
EBro06_SQ001_A05_R room
Hordeum vulgare subsp.
                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                             sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCGATGTGCCCGCCTGCTCGAGCTGCTTCCTCTGCCCTGCAGAGTGATGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCGAGCTGCTCGACTTCAACTGCCACTGCCAGAAGCCCGAGCTCGTGAGCAGCATCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGTACTACTACCGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                             ProThrAlaSerThrProAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTCCTCCTCCTCCGCTGTTGAGACCGGCAGC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProThrAlaVal 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCCAGTGCTCTTCCGCCGGCCACCCCATCTCGATTCCCCCCATCGAGACCAGCGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTGTGTTCAGAAGGCCTGCGAGGTCAAGGACCAAATCTCCGTCTCCAACGCCGTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAGCGCCTCCAAGGCCTCCAGCACCTCGAGCTCCGCCCCGCTGAGACCAGCGCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGlu
                                    est@scri.sari.ac.uk.
Location/Qualifiers
/organism="Hordeum vulgare subsp. vulgare"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64.67%
47.90%
39.05%
                                                                                                                                                                                                                                                                                     GI:21969776
                                                                                                                                                                                                                                                                                                                419 bp
R root, 3 week,
ıbsp. vulgare cD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (1-538)
                                                                                                                                                                                                                                                                                                                                                                                                                              167
                                                                                                                                                                                                                                                                                                                                                                                                      523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative: Mismatches: Indels: Gaps:
                                                                                          Scotland,
                                                                                                                                                                                                                                                                                                                       p mRNA linear EST 26-JUL-2002
k, drought-stressed, cv Optic, EBro06
cDNA clone EBro06_SQ001_A05 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----TCCACCAGCGAGAGCTCCAGCGCCGTT
                                                                                          덪
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
48
11
                                                                                                                                                                                Mudie, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCACCACCGGTGCC
                                                                                                                                                                                 Cardle,
                                                                                                                                                                                                                       Pooideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    175
                                                                                                                                                                                                                                                                                                                                                                                                                                                        502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295
                                                                                                             RESULT 10
BQ499065
LOCUS
DEFINITION
ACCESSION
VERSION
                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-4 (1-194) x BQ761304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment
                                                                                                                                                                                                           387
                                                                                                                                                                                                                                                           327
                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                             267
                                                                                                                                                                                                                                                                                                                                                               207
                                                                                                                                                                                                                                                                                                                                                                                                                 147
                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                         41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27
                                                                                                   BQ499065
EST08290 Pb
BQ499065
BQ499065.1
EST.
1 (bases 1 to 311)
Goldman,G.H., Marques,E.R., Ribeiro,D.C.D., Bernardes,L.A., Puccia,R., Travassos,L.R., Nobrega,F.G., Nobrega,M.P., Savoldi-Barbosa,M. Semighini,C.P. and Goldman,M.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71
                                                                                                                                          Pb0001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.86e-20
382.00
67.69%
56.15%
37.34%
```

```
Paracoccidioides brasiliensis
Paracoccidioides brasiliensis
Eukaryota, Fungi, Ascomycota, Pezii
Onygenales; mitosporic Onygenales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCCAGTGCTCTTCCGCCGGCCACCCCATCTCGATTCCCCCCATCGAGACCAGCGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ThrArgLeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGln1leThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCGATGTGCCCGCCTGCTCGCTGAGCTGCTTCCTCTGCCCTGCAGAGTGATGCTTGC
                                                                                                                                                                                                                                                                   ACCACCGCCTCCACCAGCGAGAGCTCCA
                                                                                                                                                                                                                                                                                                              uProThrAlaGluProThrAlaGluPro
                                                                                                                                                                                                                                                                                                                                                                                                -ProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTGTGTTCAGAAGGCCTGCGAGGTCAAGGACCAAATCTCCGTCTCCAACGCCGTCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCGAGCTGCTCGACTTCAACTGCCAACTGCCAGAAGCCCGAGCTCGTGAGCAGCATCACT
                                                                                                                                                                                                                                                                                                                                                     TCCAGCGCCTCCAAGGCCTCCAGCACCTCGAGCTCCGCCCCCCGCTGAGACCAGCGCCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cultivar="Optic"
/db_xref="taxon:112509"
/clone="Ebroof.50001_A05"
/tissue_type="root"
/dev_stage="3 week"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="vector: pSPORT1; Site_1: Sal 1; Site_2: Not 1; Non-normalised library, directionally cloned into pSPORT1. Non-normalised library, directionally cloned into pSPORT1. Perived from roots of 3 week old drought stressed barley plants. After two weeks in control conditions the seedlings were raised above the hydroponic solution for 3 hours daily. N.B. This library has been superseded by EBro08. Developed as part of the barley transcriptome resources of BBSRC/SEERAD funded cereal IGF (Investigating Gene Function) project."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clo\overline{n}e lib="root, 3 week, drought-stressed, EBro06"
                                                                                                               GI:24452039
                                                                                                                                                      311 bp mRNA lir
Paracoccidioides brasiliensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-419)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
    Pezizomycotina; Eurotiomycetes; ales; Paracoccidioides.
                                                                                                                                                                                                                                                                                                              129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            419
73
15
41
0
                                                                                                                                                                            linear
                                                                                                                                                          CDNA,
                                                                                                                                                        mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Optic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                           326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
```

```
RESULT 11
BM077163
LOCUS
                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
COMMENT
                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-4 (1-194) x BQ499065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                 JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91
                                                                                              Contact: El-Dorry, Hamza
Department of Biochemistry
Institute of Chemistry. Un:
Avenida Professor Lineu Pro
                                                                                                                                                                                        Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Hypocreaceae; Hypocrea.

1 (bases 1 to 667)

Chambergo, F.S., Bonaccorsi, E.D., Ferreira, A.J.S., Ramos, A.S.P., Ferreira, J.R.Jr., Abrahao-Neto, J., Farah, J.P.S. and El-Dorry, H. Elucidation of the metabolic fate of glucose in the filamentous fungus Trichoderma reesei using expressed sequence tag (EST) analysis and cDNA microarrays

J. Biol. Chem. 277 (16), 13983-13988 (2002)
                           Email: dorry@iq.usp.br
                                                                                                                                                                                                                                                                                                                                                Hypocrea jecorina
Hypocrea jecorina
                                                                                                                                                                                                                                                                                                                                                                                                                     sequence.
BM077163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The Paracoccidioides brasiliensis EST gen Eukaryotic Cell, (2002) In press Contact: Gustavo Henrique Goldman Laboratory of Molecular Biology Universidade de Sao Paulo - USP - FCFRP Av do Cafe S/N, CEP: 14040-903, Ribeirao
FORWARD: Universal M13
                 PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                      BM077163.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TrEST-A0723 TrEST-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BM077163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: ggoldman@usp.br
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTGCGTTGAGAAATCTTGCGACGTTGCTGCCCAA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProCysValGluGluAlaCysProLeuAspAlaArg 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTGATATCCCACCTTGCGCTTTGAGCTGTTTCGTTGATACTCTCGGAAACGACGGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGCAGTTCTCACGCTCTCATTGCTCTTGTTGCGGCCAGCCTAGCAAATGCTCAGCTC 150
                                               (55) 11-38183848
(55) 11-38183848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Paracoccidioides
/mol type="mRNA"
/db_xref="taxon:121759"
/clone_lib="Pb0001"
88 c 59 g 91 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.87e-16
322.00
93.06%
77.78%
31.48%
                                                                                                                                                                                                                                                                                                                                                                                                      GI:18498345
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypocrea
 forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1-311)
                                                                                              University of Sao
Prestes, 748, Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp mRNA linear EST 09 jecorina cDNA clone Tr-A0723
primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          brasiliensis'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         genome
                                                                                              Paulo,
Paulo,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        311
56
11
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Preto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           project
                                                                                              SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 05-FEB-2002
-A0723 5', mRNA
                                                                                              05508-900,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                  Ş
                                                                            밁
                                                                                                     S
                                                                                                                                           В
                                                                                                                                                                       á
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                            뭐
                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                             뎏.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-4 (1-194) x BM077163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Х
О.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
        384
                                                                                                                                                                                                           324
                                                                                                                                                                                                                                       111 AlaGluProThrGluGluProThrAlaGluPro-------ThrAla 123
                                                                                                                                                                                                                                                                             264
                                                                                                                                                                                                                                                                                                                                                                                                             147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scores:
                                                                                                                                                                                                                                                                                                                                              207
                                                                                                                                                                                                                                                                                                           96
                                                                                                                                                                                                                                                                                                                                                                             76
                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: M13 reverse primer High quality sequence stop: 66'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BACKWARD: Universal M13 reverse Plate: 8 row: E column: 3
                             GlyValProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrPro 166
                                                                                                                                      GluProThrAlaGluProThrHisGluProThr--------
                                                                                                                                                                                                                                                                                                      AspThrThrAlaAlaProGluPro------SerGluThrAlaGlu---ProThr 110
                                                                                                                                                                                                                                                                                                                                                                          SerAsnIleValValAspGlnCysSerLysAlaGlyValProIleAspIleProProVal 95
                                                                                                                                                                                                                                                                                                                                                                                                                                 -----ProCysValGluGluAlaCysPro-----LeuAspAlaArgIleSerVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCAACGACTTCGACTGCCAGTGC---AAGCCCGAGGCTCAG;CCAGCCTGACCCATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LeuThrAspPheLysCysHisCysSerLysProGluLeuProGlyGlnIleThr-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCCCCTCATGCGCCCAAGCGTGCTTCTCGTCGGCCGCCCCGGGCGTCGGCTGCGAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArg
                                                                       GGACCAAGCGGCGAACAGCCACCAGCGGATTCACCACACTGCCCACCGGCCCT---GGC
                                                                                                      AGCTCCCCGGTCAGCAGCCCCTCCGGAAGCCCCCCCTCCTCCTTCTTCTTCTTCTCCT 383
                                                                                                                                                                                                                                                                          TGCCAGACCAGCAGCCTCCTCCCGCCGGCGGCAGCTCCAGCACCCCGGAAGTCCCCAGC 323
                                                                                                                                                                                                                                                                                                                                          GCCAGCTCAGTCTGC---GCCTGTGCCAGCGCCTCGCCCACGCTCGTTGCCCCTGGAACT 263
                                                                                                                                                                                                                                                                                                                                                                                                             CTGGTGCCTGCGTCGCCACTCGCTGCCTGCTGCTCTGCAGGCCGTCATCACCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="Mycelia"
/dev_stage="18 hr Glycerol-grown culture"
/lab_host="E. coli SOLR cells (kanamycin resistant)"
/clone_lib="TrEST-A"
/clone_lib="TrEST-A"
/note="Vector: pBluescript_SK(+); Site_1: EcoRI; Site_2:
XhoI; anamorph=Trichoderma reesei; Cloned unidirectionally
XhoI; anemorph=Trichoderma reesei; Cloned unidirectionally
You have a cloned into EcoRI site of
pBluescript. Primer: Oligo (dT). Average insert size: 1,2
kb; Uni-ZAP XR Vector system -5' adaptor sequence:
S'GAATTCGGCACGAG3' -3' adaptor sequence:
S'CTCAAGTTTTTTTTTTTTTTTTTTT3'"
98 a 266 c 188 g 115 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /strain="QM9414 (ATCC26921)"
/db_xref="taxon:51453"
/clone="Tr-A0723"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Hypocrea jecorina"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'sex="Asexual"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.16e-07
219.50
44.19%
33.49%
21.46%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1-667)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72
72
23
51
```

146 443

500

134

146

60 89

206

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
BM866652
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
   Query Match:
DB:
                               Percent Similarity:
Best Local Similari
                                                                        Alignment :
Pred. No.:
                                                                                                                   BASE COUNT
ORIGIN
                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            561
                               Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mgcs006xB09f.b Magnaporthe grisea CS Uni-Zap XR Library Magnaporthe grisea CDNA clone mgcs006xB09 5', mRNA sequence.

BM866652
BM866652.1 GI:19234334
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST.

Magnaporthe grisea (anamorph: Pyricularia grisea)

Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact person
:Best nr hit (April. 22, 2003) gb|EAA29323.1| predicted protein
[Neurospora crassa] 55 6e-07
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Department of Plant Pathology & Microbiology
Texas A&M University
Peterson Bldg, MS2132, College Station, TX 7
Tel: 979 845 483
Fax: 979 845 6483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 564)
Ebbole, D.J., Yuan, J., Thomas, T.L., Bobrowicz, P., Lu,G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FORWARD: T3 primer BACKWARD: T7 prime
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Ebbole DJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Expressed sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plate: mgcs006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTGGTTTTGCGGCTACCTGGGCGATTGCAGTTTTGCTGGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyGlyIleAla-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AlaGlu----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTGGGCCGCCGACTCTTCCCCCGAGCGGCGGTTCTCGAGTCGAGATGAGCCTCGTTGCT 620
                                                                                                                                                                                                                                                                                                                                                                                                                                                    primer: T3.
                                                                                                                                100
                                                                                                                            /clone_lib="Magnaporthe grisea CS Uni-Zap XR Library"
/clone="Vector: pBluescriptSK; Site_1: EcoRI; Site_2: XhoI
; Unidirectional cloning. EcoRI side has T3 primer and
predominantly 5' reads. T7 primer on XhoI side of insert.
Conidial library. Point inoculation of Guyll at center of
oatmeal agar plate. Conidia were harvested after two weeks
of growth. Sequences were processed by one of two methods.
Where a full-length alignment to the M. grisea genome
sequence was available, the EST sequence was trimed
according to the alignment, otherwise sequence quality was
assessed using phredPhrap version 991019 and trimmed
according to phd files (0.05) and for vector seqs."

242 c 128 g 94 t
                                                                                                                                                                                                                                                                                                  /db_xref="taxon:148305"
/clone="mgcs006x809"
/sex="Matl-2 hermaphrodite"
/cell_type="conidia"
/clone_lib="Macnanana"
                                                                                                                                                                                                                                                                                                                                                                                            /organism="Magnaporthe
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
   1.98e-06
202.50
47.42%
32.99%
19.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --PheproGlyAlaGlySerAsnValArgAlaSerVal-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----AlaAlaLeuLeuGlyLeu 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     column:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                           grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rice blast fungus, Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TX 77843-2132,
   564
64
28
81
22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bhatterai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                            JOURNAL
COMMENT
                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                            BM866040
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-4 (1-194) x BM866652
                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               150
                                                                                                                                                                                                                                                                                                                                                                                                                                                     533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٢
```

```
mgcs004x016f.b Magnaporthe grisea CS Uni-Zap XR Library Magnaporthe grisea cDNA clone mgcs004x016 5', mRNA sequence.
                                                                                             Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact person
;Best nr hit (April. _22, 2003) gb|EAA29323.1| predicted protein
                                                                                                                                                                                 Peterson Bldg, MS2132,
Tel: 979 845 4831
Fax: 979 845 6483
                                                                                                                                                                                                                                                                                                                      Unpublished
Contact: Ebbole DJ
                                               [Neurospora crassa] 51 8e-06
PCR PRimers
                                                                                                                                                                                                                                                                Department of Plant Pathology & Microbiology
Texas A&M University
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ebbole,D.J., Yuan,J., Thomas,T.L., K. and Dean,R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BM866040.1 GI:19233722
BACKWARD: T7 primer
                                                                                                                                                                                                                                                                                                                                                                                                       Expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Magnaporthe grisea (anamorph: Pyricularia
                            ORWARD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C---GCCACTATCGGC-----GCTGCTGCTCTTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ThrargLeuThraspPheLysCysHisCys-----SerLysProGluLeuProGlyGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | lArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGly 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rAlaGluProThrAlaGluProThrAlaGluProThrHisGluProThrGluGluProTh 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCGCCGCCCTACCÁCCACCCÁCG---CCGGCAÁCTCTTCGGCCTCGGCCAGCACCÁCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rAlaAlaProGluProSerGluThrAlaGluProThrAlaGluProThrGluGluProTh 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACGGCGAGGCCCTGTGCAAGAACGTCCCCACCGCTGTTCCTACCTCCT------CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTACTTCCTTGCCTCGCCAAGTGCACCGACCCTGGCGACCTCTCCAAGGCTGCCACC 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IleThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACGGC---ACCGACGTCGCCTGCCAGTGTGGTGAGAAGAAGAAGAAGACATTGCCAACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTTCCCTCCCCGCCTGCGCTGTCGACTGTCTGAGCAGCGCTATTGCCTCTTCCGGCTGC 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAAGTTCTCC---ATCATCCTCGCCGCCGCCGCCACGGCCGTCGTCGCTCAGGACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCTTCCCCCACCAGCACCAGCGGCGGCAGCAGCAGCACCCAGCGGCACCAGCGGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rAlaValProThrGlyThrGlyGlyGlyVal-----ProThrGlyThrGlySerPheTh 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCCCTCCATGTCGACTGGCGTCCCCAAGACCAACGGC-ACCTCTGCTGCCTCTCCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -ValValAspGlnCysSerLysAlaGlyValProIleAsp1leProProValAspThrTh 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 553)
                      T3 primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCTCTCCCTCTGCCACCACGCCTGCC-----
                                                                                                                                                                                                                                                                                                                                                                                                     sequence tags from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     grisea
                                                                                                                                                                                                                                          College
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-564)
                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                            Station,
                                                                                                                                                                                                                                                                                                                                                                                                       rice blast fungus, Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bobrowicz, P., Lu, G.,
                                                                                                                                                                                                                                          ×
                                                                                                                                                                                                                                            77843-2132,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCTCTGGCGCCTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bhatterai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            374
```

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-081-935-4 (1-194) x BM866040 (1-553)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                453
                                                                                                                           410
                                                                                                                                                               149
                                                                                                                                                                                                     351
                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                291
                                                                                                                                                                                                                                                                                                                      111
                                                                                                                                                                                                                                                                                                                                                             243
              189
                                                                                    169
                                                                                                                                                                                                                                                                                                                                                                                                                                          183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    123
                                                                                                                                                                                                                                                                                                                                                                                               91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plate: mgcs004
Seq primer: T3
                                                                                                                                                                                                 - ACCTCTGCTGCCTCTCCCACCGCTTCCCCCACCAGCACCAGCGGCGGCGGCAGCAGGAACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                  GACCTCTCCAAGGCTGCCACCAACGGCGAGGCCCTGTGCAAGAACGTCCCCACCGCTGTT 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LysProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysProLeuAspAla 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCys-----Ser
                                                                                eProGlyAlaGlySerAsnValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGl 189
                                                                                                                           CAGCGGCACCAGCGGC----
                                                                                                                                                   oThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThrProAlaGluPh
                                                                                                                                                                                                                                    sGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyVal-----Pr 149
                                                                                                                                                                                                                                                                          TCGGCCTCGGCCAGCACCATGCCCTCCATGTCGACTGGCGTCCCCAAGACCAACGGC
                                                                                                                                                                                                                                                                                                                aGluProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHi 131
                                                                                                                                                                                                                                                                                                                                                             CCTACCTCCT---
                                                                                                                                                                                                                                                                                                                                                                                           plleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGluProThrAl 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ArgIleSerValSerAsnIle-ValValAspGlnCysSerLysAlaGlyValProIleAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTATTGCCTCTTCCGGCTGCAACGGC---ACCGACGTCGCCTGCCAGTGTGGTGAGAAG 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGTCGCGCTCAGGACCTCTCTCTCCCTCCCCGCCTGCGCTGTCGACTGTCTGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlyLeuAlaSerAlaGlnLeuProAspIleProProCysAlaLeuAsnCysPheValGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGAAGGACATTGCCAACGTCGCTACTCCTTGCCTGCCCAAGTGCACCGACCCTGGC 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="Magnaporthe grisea CS Uni-Zap XR Library"
/note="Vector: pBluescriptSK: Site_1: EcoRI; Site_2: XhoI
; Unidirectional cloning. EcoRI side has T3 primer and
predominantly 5' reads. T7 primer on XhoI side of insert.
Conidial library. Point inoculation of Guyll at center of
oatmeal agar plate. Conidia were harvested after two weeks
of growth. Sequences were processed by one of two methods.
Where a full-length alignment to the M. grisea genome
sequence was available, the EST sequence was trimed
according to the alignment, otherwise sequence quality was
assessed using phredphrap version 991019 and trimmed
according to phd files (0.05) and for vector seqs."

83 a 233 c 132 g 105 t
                                            GGCTCTGGCGCCC---GCCACTATCGGC----GCTGCTGCTCTTCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="mgcs004x016"
/sex="Mat1-2 hermaphrodite"
/cell_type="conidia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           db_xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /strain="Guyll"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Magnaporthe grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.05e-05
193.00
46.70%
33.52%
18.87%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      type="mRNA"
                                                                                                                                                                                                                                                                                                                                                       -----CCAGCGCCGCCCCTACCACCCACG---CCGGCAACTCT 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     row: O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels:
                                                                                                                       GGCTCTCCCTCTGCCACCACGCCTGCC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       553
61
24
77
21
                                                                                                                                                           169
                                                                                                                                                                                                 409
                                            499
                                                                                                                       452
                                                                                                                                                                                                                                                                            350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                      á
                                                            밁
                                                                                              S
                                                                                                                                       밁
                                                                                                                                                                         ঠ
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
CD458295/c
                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x CD458295 (1-952)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                               Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                  No.:
                                                            716
                                                                                                                                       773
                                                                                                                                                                                                                  833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            500 TCTT 503
62 CysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIl^ValValAsp
                                                                                              $
                                                                                                                                                               25 ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr
                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gibberella zeae
Eukaryota; Pungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eastern Cereal and Oilseed Research Agriculture and Agri-food Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complex plant substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tinker, N.A.
A cDNA library prepared from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Watson,R.J., Heys,R., Chapados,J., Couroux,P., Harris,L.J.,
J., Lacroix,C., Ouellet,T., Robert,L.S., Singh,J.A., Sprot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CD458295
CD458295.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CD458295 952 bp mRNA linear EST 03-JUN-2003 FG08_09f09_R FG08_AAFC_ECORC_Fusarium_graminearum_complex_substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: watsonrj@agr.gc.ca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bldg. 20, Central Experimental Farm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Watson, Robert.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                      AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGln---LeuProAspIlePro
                                                        AspPheLysCysHisCysSer------LysProGluLeuProGlyGlnIleThrPro
                                                                                                                                 GCTACCCTCTCCCTCCCTGCCGGCCTCGCTGTCGCTCAGGACCTCAGTGGTCAACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (613) 759-1655
(613) 759-1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:5518"
/clone="Fg08_09f09"
/tissue_type="Mycelium"
/dev_stage="Msexual"
/lab_host="E. coli DH10B"
/clone_lib="Fg08_AAFC_ECORC_Fusarium_graminearum_complex_substrate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pBluescript II+; Site_1: EcoRI; Site_2: XhoI; Fusarium graminearum grown on a complex plant substrate-- wheat leaves treated to remove most of the low molecular weight, water-soluble components."

211 c 288 g 226 t 5 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Gibberella
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          strain="DAOM 180378"
                                                                                                                                                                                                                                                                                                                                                 185.00
41.78%
32.86%
18.08%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:31373035
                                                                                                                                                                                                                                                                                                                                                                                                                                  7.98e-05
                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                     Conservative: Mismatches:
                                                                                                                                                                                                                                                                                                                                                   Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fusarium graminearum grown on a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     zeae"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ottawa, Ontario,
                                                                                                                                                                                                                                                                                                                               952
70
19
89
36
```

K1A 0C6

Sprott, D.

Hattori t,D. and

Score:

밁 Ş 밁 á В ઠ 밁 ક 문 ş

657

61

18

717

44

밁 Ş 밁 Ş 문 ş B ફ

Ś

179 24

```
RESULT 15
BU066219
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
     Percent Similarity:
Best Local Similarity:
                                        Score:
                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                        20.
.
                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BU066219
Fgr_9_K19_T3
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 73)
Trail, F., Xu, J.-R., San Miguel, P., Halgren, R.G. and Kistler, H.C. Analysis of expressed sequence tags from Gibberella zeae (anamor Fusarium graminearum)
Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                       Department of Plant Biology Michigan State University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gibberella
Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BU066219.1
                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlnCys---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACGGAACCATGACCAAGACCATGACTGAGGGAGGTGGATCCGGAGGAGGC-GCTGTCAC 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCATCTTCTCAAGCATCCCTGATGAGAAGCCCCATCCCTCCTGTTACTCCCCGGTCCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGlu-ProTh 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTGCAAGGSCTATGCTGCCACCGCTGGCTCCGGCTCCGCCACTGCCGCTCCCACCGAG 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGTCTCCTCGCCATTATTGCTGCTGCTATCGCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lGly-----GlyIleAlaAlaAlaLeuLeuGlyLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGCAGTGTCCCTACCGACGCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVa 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCCACGGGAACCTCTGGCGGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rAlaGluProThrHisGluPro-------ThrGluGluProThrAlaVa 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTCTCGGCTCTGTTACCGTCAGCATCGACACCTCTATCACTGGCTCCGCTAGCGTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTTGACCGAAGCTTGCCAGGTTGATGACCTACTCAAGGCCCAGAAGGCTGCCGCCGAC
                                                                                                                                                                                                                                                                                                                    t Lansing, MI 4
: 517 432 2939
: 517 353 1926
                                                                                                                              151
                                                                                                                                                                                                                                                                                     trail@msu.edu
9 row: K co
                                                                                                                           /organism="Gibberella zeae"
/mol type="mRNA"
/strain="NURL 31084"
/db_xref="taxon:5518"
/clone lib="Nitrogen-starved m;
/note="Vector: Unit-ZapII; Site
a 255 c 172 g 153 t
                                                                                                                                                                                                                                                                 row: K column: 19.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----IleProProValAspThrThrAlaAlaProGluProSerGluThr 106
     7.12e-05
184.00
41.51%
32.08%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:22506508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                       MI 48824, USA
   Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bp mRNA linear EST 26-
d mycelia Gibberella zeae cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -GGTGCTGGTACTGCTGGCCCTGCTGCCAT 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -GGCGGCGGCAGCGGCACCACTGGCGGTGC 307
                                                                                                                            Site_1: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -SerLysAlaGlyValProlleAsp 91
                                                                                                                                                            mycelia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  219
     733
68
20
91
                                                                                                                                         Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST 26-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  417
                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                   RESULT 16
BM872390
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-4 (1-194) x BU066219
                                                                                        COMMENT
                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                          JOURNAL
                                                                                                                                         TITLE
                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     357 GCCTGCAAGGCCTATGCTGCCACCGCTGGCTCCGGCTCCGCCACTGCCGCTCCCACCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                                                                                             869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25 ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                  688 bp mRNA linear EST 06-MAY-2003 mgmy002xP06f.b Magnaporthe grisea MY Uni-Zap XR Library Magnaporthe grisea cDNA clone mgmy002xP06 5', mRNA sequence.
BM872390
On Mar 7, 2002 this sequence version replaced gi:19240072. Contact: Ebbole DJ
Department Plant Pathology & Microbiology
Texas A&M University
Peterson Bldg, MS2132, College Station, TX 77843-2132, USA Tel: 979 845 4831
                                                                                                                                                        1 (bases 1 to 688)
Ebbole,D.J., Yuan,J., Thomas,T.L.,
,K. and Dean,R.A.
                                                                                                                                                                                                                                                Magnaporthe grisea
                                                                                                        Unpublished
                                                                                                                                       Expressed sequence tags from the
                                                                                                                                                                                                           Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                    BM872390.2 GI:30406827
                                                                                                                                                                                                                                                               Magnaporthe grisea (anamorph:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlnC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValValAsp
|||::: ||||||| :::||| :::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCTTGACCGAAGCTTGCCAGGTTGATGACCTACTCAAGGCCCAGAAGGCTGCCGCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTACCCTCTTCCTCGCTGCTGCCGGCCTCGCTGTCGCTCAGGACCTCAGTGGTCAACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGln---LeuProAspIlePro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGlu-ProTh 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AspPheLysCysHisCysSer------LysProGluLeuProGlyGlnIleThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCAGTGTCCCTACCGACGCT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCCACGGAACCTCTGGCGGC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rAlaGluProThrHisGluPro------ThrGluGluProThrAlaVa 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCATCTTCTCAAGCATCCCTGATGAGAAGCCCATCCCTCCTGTTACTCCCCGTCCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTCTCGGCTCTGTTACCGTCAGCATCGACACCTCTATCACTGGCTCCGCTAGCGTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGTCTCCTCGCCATTATTGCTGCTGCTATCGCT 731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAla 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lproThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACGGAACCATGACCAAGACCATGACTGAGGGAGGTGGATCCGGAGGAGGC-GCTGTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----IleProProValAspThrThrAlaAlaProGluProSerGluThr 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.99%
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-731)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GGCGGCGGCAGCGGCACCACTGGCGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
Gaps:
                                                                                                                                                                                                                                                                 Pyricularia grisea
                                                                                                                                       rice blast fungus, Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGCTGGTACTGCTGGCCCTGCTGCCAT
                                                                                                                                                                          Bobrowicz, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SerLysAlaGlyValProIleAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 ¥
                                                                                                                                                                            Lu,G.,
                                                                                                                                                                            Bhatterai
```

697 180 646 160 595 416

91 356 81 296 61 236

476

밁 á В Ś 밁 á В á 밁 ર્ 밁 Ś 밁 Ş В

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-081-935-4 (1-194) x BM872390 (1-688)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    о
:
138 ThrAlaValProThr------GlyThrGlyGlyGlyValProThrGlyThrGlySer
                                                                                                                                                                                                103
                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                      83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FORWARD: T3 primer
BACKWARD: T7 primer
Plate: mgmy002 row: P
Seq primer: T3.
                                                                                                                                                                                                                                                                                                                                                                        66 AlaCysProLeuAspAlaArgIle-----SerValSerAspIleValValAspGln---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact person
;Best nr hit (April. 22, 2003) gb|EAA30838.1| predicted protein
[Neurospora crassa] 49 7e-05
PCR PRimers
                                                                                                                                                                                                                                                                               CysSerLysAlaGlyValProlleAspIleProProValAspThrThrAlaAlaProGlu 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PheLysCysHisCysSerLysProGluLeuProGlyGlnIleThrProCysValGluGlu 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThrAsp 45
                                                                                                                                                                                                                                                                                                                                                                                                                    CAGAAGTGCCTGTGCGACAAACCCCGACTATCGCAACGGTCTGAAAGACTGTGTGACTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LeulleAlaLeuValAlaAlaGlyLeuAlaSerAlaGln---LeuProAspIleProPro 25
                                                              TCAGCTCCTGCATCTACTACCCCTGCTGCTTCGACAACACCTAGCTCAACGTCAGCGTCG
                                                                                                                                                         GCCTTGTCAACT----
                                                                                                                                                                                            ProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluProThr 122
                                                                                                                                                                                                                                                                                                                              AGCTGTGGCGCTGATGCAACAGCAGTCCACGCTGCATTGAACACATACGTCGATGCTGTC 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCGGGCAAGGTTGCTTCAACAGCATGAAGGGCACATTGGGTTGTGCTCCT---GCCGAC 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCTTGTCTCACTTGCAGCCAGTCTGGCCCTTGGCCCAGGACATCAACCCTGTCCCGGCA 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone lib="Wagnaporthe grisea MY Uni-Zap XR Library" /note="Vector: pBluescriptSK; Site 1: EcoRI; Site 2: XhoI; Unidirectional cloning. EcoRI side has T3 primer and predominantly 5' reads T7 primer on XhoI side of insert. Minimal medium mycelium library. Sequences were processed by one of two methods. Where a full-length alignment to the M. grisea genome sequence was available, the EST sequence was trimed according to the alignment, otherwise sequence quality was assessed using phredPhrap version 991019 and trimmed according to phd files (0.05) and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          vector seqs.
224 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="mgmy002xP06"
/sex="Mat1-2 hermaphrodite"
/cell_type="mycelium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Magnaporthe/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             db_xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.000104
181.50
41.06%
30.92%
17.74%
                                                                                                      -GluProThrAlaGluProThrHisGluProThrGluGluPro 137
                                                                                                                                                    -CCAGCATCGACTCCGCCTCATTCTACCTCGGCGCCACCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ס
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            grisea"
                                                                                                                                                                                                                                      CCCCCAGCTGCCACATCTACTCCTCCA 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    688
64
21
97
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 others
                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                          82
```

ş

Ś

밁 Ś 뭐 á 밁 Ś 밁 ঠ 밁 ફ

Pred. No.:

0.000283

Length:

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 17
BM872513
LOCUS
LEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      407 ACTGCGTCAACGACTTCATCTAGCAGCACCTCGTCGTCGACTCANAGCAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    188 LeuGlyLeuAlaAlaTyrLeu 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
On Mar 7, 2002 this sequence version replace.
On Mar 7, 2002 this sequence version replace.
Contact: Ebbole DJ
Department of Plant Pathology & Microbiology
Department of Plant Pathology & Microbiology
Peterson B&M University
Peterson BMS 483132, College Station, TX 7
Tel: 979 845 483
Fax: 979 845 6483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BM872513 701 bp mRNA linear EST 06-MAY-2003 mgmy003xM10f.b Magnaporthe grisea MY Uni-Zap XR Library Magnaporthe grisea cDNA clone mgmy003xM10 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact person
;Best nr hit (April. 22, 2003) gb|EAA30838.1| predicted protein
[Neurospora crassa] 49 7e-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plate: mgmy003 row: M
Seg primer: T3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FORWARD: T3 primer
BACKWARD: T7 prime
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Expressed sequence tags from the rice blast fungus, Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ebbole, D.J., Yuan, J., Thomas, T.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Magnaporthe grisea (anamorph:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BM872513.2 GI:30406719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             K. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGAGGGGCTATCGAACACAGCCAAAATCGGTATTGCTGTTGGCGGCGCTGTGGCGGNA 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlyAlaGlySerAsnValArgAlaSerValGly-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCACTACTTCCTCGGCGACCTCGTCAGCAACTGCTGCGCCCGCTGCAAGTGAGAAATCA 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCGGTCTGAATGGGGTTCTG 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PheThrValThrGlyArgProThrAlaSerThrProAla-------GluPhePro 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 701)
                                                                                                                  148
                                                                              /db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xref="taxio"./db_xr
                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          strain="70-15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mol_type="mRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Magnaporthe grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2002 this sequence version replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pyricularia grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Station, TX 77843-2132, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bobrowicz, P., Lu, G., Bhatterai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -GlyIleAlaAlaAlaLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gi:19240195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187
```

USA

```
Score:
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                   JOURNAL
COMMENT
                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 18
CD035585
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-081-935-4 (1-194) x BM872513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26
                                                                                                                                                                                                                                                                                                                                                                           640 bp mRNA linear EST 07-MAY-2003 mgmt020xE10f.b Mated culture Magnaporthe grisea cDNA clone mgmt020xE10 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J
                                                                                                                                                                                                                                                       Magnaporthe grisea
Eukaryota; Fungi; /
                                                                                                                                                                                                                                                                                                                                   CD035585.1
EST.
                                                   Contact: Ebbole DJ
                                                                                                                                                                                                                                                                                                        Magnaporthe grisea (anamorph: Pyricularia
Department of Plant Pathology Texas A&M University
                                                                        Unpublished
                                                                                                                              Expressed sequence tags
                                                                                                                                                                                                                               Sordariomycetes incertae
                                                                                                                                                         bbole, D.J., Yuan, J.,
K. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThrAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGln---LeuProAspIleProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTGTGGCGCTGATGCAACAGCAGTCCACGCTGCATTGAACACATACGTCGATGCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaCysProLeuAspAlaArgIle-----SerValSerAsnIleValValAspGln---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGAAGTGCCTGTGCGACAAACCCGACTATCGCAACGGTCTGAAAGACTGTGTGACTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PheThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGly---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAGCTCCTGCATCTACTACCCCTGCTGCTTCGACAACACCTAGCTCAACGTCAGCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ala-----GluProThrAlaGluProThrHisGluProThrGluGluPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTTGTCAACT-----CCAGCATCGACTCCGCCTCATTCTACCTCGGCGCCCACCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProSerGluThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluProThr 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CysSerLysAlaGlyValProIleAspIleProProValAspThrThrAlaAlaProGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCGGGCAAGGTTGCTTCAACAGCATGAAGGGCACATTGGGTTGTGCTCCT---GCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AlaAlaLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ANATCAGCTGAGGGGCTATCGAACACAGCCAANATCGGTATTGCTGTTGGCGGCGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCÁCTACTTCCTCGGCGACCTCGTCAGCAÁCTGCTGCG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTGCGTCAACGACTTCATCTAGCAGCACCTCGTCGTCGACTCANAGCAGCAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ThrAlaValProThr------GlyThrGlyGlyGlyValProThrGlyThrGlySer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCGTTGCTGCTGGTCCT------CCCCCAGCTGCTGCCACATCTACTCCTCCA
                                                                                                                                                                            (bases 1 to 640) bole, D.J., Yuan, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176.00
40.39%
29.56%
17.20%
                                                                                                                                                                                                                                                                                                                                                              GI:30417423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187
                                                                                                                                                                                                                            Ascomycota; Poncertae sedis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----SerAsnValArgAlaSerValGlyGlyIleAla
                                                                                                                                                                               Thomas, T.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-701)
                                                                                                                              from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                           the
                          ٤٦
                                                                                                                                                                                                                          Pezizomycotina; Sons; Magnaporthaceae;
                        Microbiology
                                                                                                                              rice blast
                                                                                                                                                                            Bobrowicz, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91
30
                                                                                                                                                                                                                                                                                                        grisea)
                                                                                                                           fungus,
                                                                                                                                                                                                                                                          Sordariomycetes;
                                                                                                                                                                            Lu,G., Bhatterai
                                                                                                                                                                                                                               Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE
                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
DB:
                                                밁
                                                                                                á
                                                                                                                                                    밁
                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-4 (1-194) x CD035585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                             348
101
                                                                                                                                                    291
                                                                                                                                                                                                                                                     231
                                                                                                                                                                                                                                                                                                                                                           174
                                                                                                                                                                                                                                                                                                                                                                                                                                                              114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plate: mgmt020 row: l
Seq primer: T3.
                                                                                                88
                                                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                                        51
                                                                                                                                                                                                                                                                                                                                                                                                           32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact portions of this sequence is available, see contact portions in the contact portion of the contact portion in the contac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peterson Bldg, MS:
Tel: 979 845 4831
Fax: 979 845 6483
                                                                                                                                                                                                                                                                                                                                                                                        ValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCys---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCAGGCCAAGATGTTTGCCGCCGTCGAGAGCTGCGTGCAAAAGAGCTGCCCAGAGTCT
                                                                                                                                                                                                                                                                               SerLysProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysPro-----
::: ||||||::::::||||||
                                                                                                                                                                                                                                                                                                                                                           CTCAACGGCGCCCGACCATTGGCTGCTCCGGC---ACCGACTTCAAGTGCCAGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCAGGACTGCATCAGCGTCGCGCTGTCGGCCATCCCGTCGTGCGCGCAGCCGTGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaGln-------LeuProAspIleProProCysAlaLeuAsnCysPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MetGlnPheSerHisAlaLeuIle-----
                                                                                                                                                    GAGTTCCAAAAGACCATTGACGGATCTGACAAGGTCTGC---ACGTGCGCTTCTGGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              129
                                                                                                                                                                                               -LeuAspAlaArgIleSerValSerAsnIleValValAspGlnCysSerLysAlaGly 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cell_type="mixed sexual development"
/dev_stage="asci, ascospores, perithecia, mycelium"
/clone_lib="Mated_culture"
/clone_lib="Mated_culture"
/note="Wector: pBluescriptSK; Site 1: EcoRI; Site_2: XhoI;
/note="Wector: pBluescriptSK; Site_1: EcoRI; Site_2: XhoI;
/note="Wector:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="mgmt020xE10"
/sex="Mat1-2 and Mat1-1 mixted culture"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Magnaporthe
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /strain="4091-5-8 X 4136-4-3"
/db_xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.000477
172.50
43.46%
30.37%
16.86%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MS2132,
ProGluProSerGluThrAlaGluProThr-----
                                                   CCCGCTTCAAACAACGCCGGGGGGGGCGCCGGAAATACCGTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         College
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1-640)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Station,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -AlaLeuValAlaAlaGlyLeuAlaSer 17
|||::::: ||||||:::|||:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58
25
67
41
```

AlaGlu.

347

100

290

8 230 50

```
Best Local Si
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 19
BJ383609/c
LOCUS
                           Ş
                                                                    밁
                                                                                                   ঠ
                                                                                                                                                                  ş
   밁
                                                                                                                                       밁
                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                          US-10-081-935-4 (1-194) x BJ383609 (1-612)
                                                                                                                                                                                                                                                                                                                Score:
                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
   482
                                                                    542
                                  128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               564 CTTGGGCTTTGAGCATTGACAAACTCGGGGCGA 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dictyostelium discoideum Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium. 1 (bases 1 to 612) Urushihara, H., Tanaka, Y., Kohara, Y. and Shin-i, T. Full length cDNA of Dictyostelium discoideum at the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center For Genetic Resource In:
National Institute of Genetics
1111 Yata, Mishima, Shizuoka 4:
Tel: 81-559-81-6856
Fax: 81-559-81-6855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BJ383609 612 bp mRNA linear EST 08-MAR-20
BJ383609 Dictyostelium discoideum cDNA library, CF Dictyostelium
discoideum cDNA clone ddc53j18 3', mRNA sequence.
BJ383609 GI:19292993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: tshini@genes.nig.ac.jp.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Tadasu
                            uProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyVa 148
                                                                                        ProThrAlaGlu-ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGl 128
TCCAACAGAAACTCCAACAGAAACTCCAACAGAAACTCCAACAGAAACTCCAACAGAAAC
                                                                CCANCAGAACACTCCAACAGAGACTCCAACAGAAACTCCAACAGAGACTCCAACAGAAAC 483
                                                                                                                                   CCAACAGAGACTCCAACTGAGACTCCAACTGAGACTCCAACTGAGACTCCAACAGAGACT 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ThrGlyThrGlySerPheThrValThrGlyArg 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGTCCAGCTTCATCCCAGGCCCGACGTCGACCTCCTCCCACCACCACCACCGTCGCAGCC 449
                                                                                                                                                                    ProlleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGlu 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGTGGAG-----TGCAGCATCGTGGTTGGTGCCGTTGGTTGGTGCCCCTTGGGTAGCC 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProThrGluGluProThrAlaValProThrGlyThrGlyGlyValPro-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGACCGGAACACCGTCTGGCCGACCCTCGGCGGGGCCCACTGCCGCCGCAAACATGGCC 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThrHisGlu 132
                                                                                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                /dev_stage="Culmination stage"
/clone_lib="Dictyostelium discoideum cDNA library,
90 c 131 g 243 t 6 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:44689"
/clone="ddc53j18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /strain="AX4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Dictyostelium"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  sex="mat A"
                                                                                                                                                                                                                                        0.000926
168.50
48.96%
41.67%
16.47%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shin-i
                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          411-8540, Japan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         discoideum"
                                                                                                                                                                                                                                            2 2 2
                                                                                                                                                                                                                                                                                           612
40
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   culmination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 08-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               149
```

```
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 20
CNS05RMN
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
US-10-081-935-4 (1-194) x CNS05RMN
                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                 Pred. No.:
                                                                                                                                                   Alignment
                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                   Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 148
                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (12-APR-2000) Genoscope - Centre National de Seque
BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.
Web : www.genoscope.cns.fr)
This sequence is a single read and was generated as part of
scale clone-end sequencing project of the Tetraodon nigrovir
genome. For more information, please take a look at
http://www.genoscope.cns.fr/Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSS; genome survey sequence.
Tetraodon nigroviridis
Tetraodon nigroviridis
Tetraodon nigroviridis
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
Tetraodontoidea; Tetraodontidae; Tetraodon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Roest Crollius, H., Jaillon, O., Dasilva, C., Ozouf-Costaz, C., Fizames, C., Fischer, C., Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weiszehach, J. Characterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis

Genome Res. 10 (7), 939-949 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Roest Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C., Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F., Baurin, W. and Weissenbach, J.
Estimate of human gene number provided by genome-wide analysis using Tetracdon nigroviridis DNA sequence
Nat. Genet. 25 (2), 235-238 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL350744
AL350744.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         014N06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tetraodon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CNS 05 RMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0899143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0835645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCCATCAAGTGGAGAATCTTTATCAATCTATAAAAGTGGATTA 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAACCGAGACTCCAACTGAAACTGTTACTCCAACCCCAACAGTA---ACACCAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       uPheProGlyAlaGlySerAsnValArgAlaSerValGlyGlyIle 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1038)
                                                                                                                                                                                                            295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MN 1038 bp DNA linear GSS 01-SEP-2000 don nigroviridis genome survey sequence T7 end of clone of library C from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                      /clone_lib="C"
/note="Genoscope
253 c 248
                                                                                                                                                                                                                                                                            organism="Tetraodon nigroviridis"
|mol_type="genomic DNA"
|db_xref="taxon:99883"
                                                                                                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                               clone="014N06"
                                     0.00181
168.00
51.16%
37.21%
16.42%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:8244514
 (1-1038)
                                                                                                                                                                                                      g 226
                                                                      Length:
Matches:
Conservative:
Mismatches:
                                                      Indels:
                                                                                                                                                                                                        . I
                                                                                                                                                                                                                         COTC014DG03C1-end
                                 1038
32
12
42
0
                                                                                                                                                                                                        16 others
                                                                                                                                                                                                                                                                                                                                                                                                              part of a large nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequencage
scope.cns.fr
                                                                                                                                                                                                                           T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168
```

Ś

86 AlaGlyValProIleAspIleProProValAspThrThrAlaAlaProGluProSerGlu

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 21
BM866206
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          及
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished
On Mar 7, 2002 this sequence version replaced gi:19233888.
Contact: Ebbole DJ
Texas A&M University
Peterson Bldg, MS2132, College Station, TX 77843-2132, USA
Tel: 979 845 4831
Fax: 979 845 4831
Fax: 979 845 5483
Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact person
.Best nr hit (April. 22, 2003) gb|AAN64312.1| MAC1 interacting
protein 1; AC11 [Magnaporthe gri. . . 192 3e-48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mgcs005xC13f.b Magnaporthe grisea CS Uni-Zap XR Library Magnaporthe grisea cDNA clone mgcs005xC13 5', mRNA sequence.
BM866206
BM866206.2 GI:30394891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      I (bases I to S67)
1 (bases I to S67)
Ebbole, D.J., Yuan, J., Thomas, T.L., Bobrowicz, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Magnaporthe grisea (anamorph: Pyricularia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariomycetes incertae sedis; Magnaporthaceae; Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                               Plate: mgcs005
Seq primer: T3.
                                                                                                                                                                                                                                                                                                                                                                                     BACKWARD: T7
                                                                                                                                                                                                                                                                                                                                                                                                     FORWARD: T3 primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Expressed sequence tags from the rice blast fungus, Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGGGTGAACCAACGGGT 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlyGlyValProThrGlyThrGlySerPheThrValThrGlyArgProThrAlaSerThr 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAGGTCAACCAACCGGTCAACCAACCGATCAACCAACGGGTCAACCGGCAGGTCAGCCA 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ThrAlaGluProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGly 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAGGTCAACCAACAGGTCAGCCAACAGGTCAACCAACGGGTCAACCGGCAGGTCAGCCA 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ThrAlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGluPro 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProAlaGluPheProGly 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGGTCAACCAACGGGTCAACCAATGGGTCAACCAACGGGTCAACCGGCAGGTCAGCCA 152
/clone libe "Wagnaporthe grisea CS Uni-Zap XR Library" /clone "Vector: pBluescriptSK; Site 1: EcoRI; Site 2: XhoI ; Unidirectional cloning. EcoRI side has T3 primer and predominantly 5' reads. T7 primer on XhoI side of insert. Conidial library. Point inoculation of Guyll at center of oatmeal agar plate. Conidia were harvested after two weeks of growth. Sequences were processed by one of two methods. Where a full-length alignment to the M. grisea genome sequence was available, the EST sequence was trimed according to the alignment, otherwise sequence quality was assessed using phredPhrap version 991019 and trimmed
                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                           /sex="Mat1-2 hermaphrodite"
/cell_type="conidia"
                                                                                                                                                                                                                             /db_xref="taxon:148305"
/clone="mgcs005xC13"
                                                                                                                                                                                                                                                                /strain="Guyll"
                                                                                                                                                                                                                                                                                                organism="Magnaporthe grisea"
                                                                                                                                                                                                                                                                                                                                                                                       primer
                                                                                                                                                                                                                                                                              type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                     row:
                                                                                                                                                                                                                                                                                                                                                                       column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            567 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       grisea)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lu,G., Bhatterai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 06-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92
                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 22
BU064230
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88
```

```
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-4 (1-194) x BMB66206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scores:
                                  Contact: Frances Trail
Department of Plant Biology
Michigan State University
East Lansing, MI 48824, USA
Tel: 517 432 2939
Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                   BU064230
Fgr_4_F04_F3 |
sequence.
BU064230
                                                                                                                                                                                                                                                                                                   Gibberella zeae
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetea;
Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                           1 (bases 1 to 607)
Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H.
Analysis of expressed sequence tags from Gibberella zeae (anam
                                                                                                                                                                                                                                                                                                                                                                        Gibberella zeae
                                                                                                                                                                                       Fungal Genet. Biol.
22508120
                                                                                                                                                                                                                            Fusarium graminearum)
                                                                                                                                                                                                                                                                                                                                                                                                                 BU064230.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProThrGluGluProThrAlaGluProThrAlaGluProThrAlaGluProThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGTTCCAAAAGACCATTGACGGATCTGACAAGGTCTGC---ACGTGCGCTTCTGGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCAGGCCAAGATGTTTGCCGCCGTCGAGAGCTGCGTGCAAAAAGAGCTGCCCAGAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SerLysProGluLeuProGlyGlnIleThrProCysValGluGluAlaCysPro-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThrAspPheLysCysHisCys---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCAGGACTGCATCAGCGTCGCGCTGTCGGCCATCCCGTCGTGCGCGCAGCCGTGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AlaGln-------LeuProAspIleProProCysAlaLeuAsnCysPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGAAGTTCAACAGTGGTCTCCTCGCCGGCGCTGCCGTCCTGGTTGCCGGTGTCGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MetGlnPheSerHisAlaLeuIle-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ValProIleAspIleProProValAspThrThrAlaAla----------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCAACGGCGCCCCGACCATTGGCTGCTCCGGC---ACCGACTTCAAGTGCCAGTGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGACCGGAACACCGTCTGGCCGACCCTCGGCGGTGCCCACTGCCGCGCATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGTCCAGCTTCATCCCAGGCCCGACGGCGACTGCTTCTCCCACCACCACCGTCGCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---LeuAspAlaArgIleSerValSerAsnIleValValAspGlnCysSerLysAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      107
4
                   trail@msu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    according
a 203 c
  row:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.00111
167.00
45.57%
32.28%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          607 l
Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -ProGluProSerGluThrAlaGluProThr------AlaGlu 112
  column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ő
                                                                                                                                                                                                      38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - CÉCGCTTCAAACAACGCCGGGGGGGGCGCCGGANATACCGTCAAC 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phd
153
                                                                                                                                                                                                      (2),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-567)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               files (0.05) and for vector g 103 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mycelia Gibberella :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -AlaLeuValAlaAlaGlyLeuAlaSer
|||::::|||:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       r EST 26-AUG-2002
zeae cDNA, mRNA
                                                                                                                                                                                                                                                  (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3
```

'n

```
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                   RESULT 23
BU066221
LOCUS
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                       ACCESSION
                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-4 (1-194)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No.:
                                                                                                                                                                                                                                                                                                                                                                                                                      383
                                                                                                                                                                                                                                                              176
                                                                                                                                                                                                                                                                                                                                                        443
                                                                                                                                                                                                                                                                                                                                                                                       136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41
Gibberella zeae
Gibberella zeae
Gibberella zeae
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Eukaryota; Fungi; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                      BU066221
Fgr_9_K21_T3
sequence.
BU066221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             بر
                                                                                        BU066221.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                         CCCGCCACCAGCACCCCGCCGCCGCTGCCACCAACCAAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                                                                                                                                                                                                       ACCACCGCCGCTGCCACCACTGTCGCTCCCATCATTCCCCACCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                    GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                  GGTGCTGGCCTCAAAGGTCTCGGTGCC----
                                                                                                                                                                                                                                                                                                                      ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                    ACCACCGCCGCTGCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Gibberella ;
/mol type="mRNA"
/strain="NRRL 31084"
/db_xref="taxon:5518"
/clone_lib="Nitrogen-st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.0012
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          x BU064230
                                                                                                         GI:22506510
                                                                                                                                                   623 bp mRNA linear EST 26-AUG-2002
Nitrogen-starved mycelia Gibberella zeae cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1-607)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                               CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           607
53
32
89
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Site_2:
                                                                                                                                                                                                                                                                                                                                                                                    155
                                                                                                                                                                                                                                                                                                                                                                                                                                                 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
PUBMED
COMMENT
                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                  Ś
                                                                                                                    밁
                                                                                                                                           Ş
                                                                                                                                                                              밁
                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-4 (1-194) x BU066221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                   252
                                                                                                                                                                                                                                                                                                                                                                                                                                 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              132
                                                                                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 623)
Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H. Analysis of expressed sequence tags from Gibberella zeae (anan Fusarium graminearum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Frances Trail
Department of Plant Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Michigan State University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fungal Genet. Biol. 38
                      ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                               ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCCACCGCTGCTGAGGAG
                                                                                                                                            GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                       AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCGAG---GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                            AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                  ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu 20
                                                                                ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                           ACCACCGCCGCTGCCACCTTCGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                          AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                               ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                               TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrargLeuThraspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                   ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  517 432 2939
517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lansing, MI
                                                                                                                                                                                                                                                                                                    -----CTTCCCGCTACCGAGAACCTCTGC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     trail@msu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db xref="taxon:5518"
/clone_1bb="Nitrogen.starved mycelia"
/clone_1bb="Nitrogen.starved mycelia"
/note="Vector: Uni-ZapII; Site_1: EcoRI; Site_2: XhoI"
/note="Vector: Uni-ZapII] t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Gibberella
/mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      row: K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.00123
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48824,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (1-623)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (2),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187-197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -GAGCAGGCCAAC
```

503

155 443 135 383

99 302

```
JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 24
BU065834
LOCUS
                                                                                                                                                                                                                                                                                                                                                            Best Local Si
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
               Ş
                                          밁
                                                                  á
                                                                                                  밁
                                                                                                                     Ş
                                                                                                                                                         망
                                                                                                                                                                                 Ś
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                 US-10-081-935-4 (1-194) x BU065834 (1-634)
                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  561
                                                                                                   207
                                                                                                                                                         147
                100
                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST.
Gibberella :
Gibberella :
                                                                      80
                                                                                                                                                                                      41
                                                                                                                                                                                                                   87
                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                         27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fgr_8_K04_T3
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Michigan State University
East Lansing, MI 48824, USA
Tel: 517 432 2939
Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Frances Trail
Department of Plant Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Analysis of expressed sequence tags Fusarium graminearum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Trail, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BU065834.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTGCTGCTGGCCTCAAGGGTCTCGGTGCC----
AlaProGluProSerGluThr---
                                                                                                                                                                                                                GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC 146
                                                                                                                                                                                                                                            ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                      ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                                                                                                                                                                                                                           (bases 1 to 634)

(bases 1 to 634)

ail.F., Xu.J.-R., San Miguel.P., Halgren,R.G. and Kistler,H.C.

ail.sis of expressed sequence tags from Gibberella zeae (anamorph
                                                                                                                  ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                      ValAspG].nCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                        TGTGACAAGÁCCGÁCCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                     ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ထ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         trail@msu.edu
8 row: K column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            מ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Gibberella
/mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:5518"
/clone_lib="Nitrogen-starved mycelia"
/clone_lib="Nitrogen-starved mycelia"
/note="Vector: Uni-ZapII; Site_1: EcoRI;
231 c 154 g 121 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         zeae
                                                                                                                                                                                                                                                                                                                                                             0.00126
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:22506123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          634 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94
-AlaGluProThrAlaGluProThrGluGluProThr
                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bp mRNA linear EST 26-AUG-2002
mycelia Gibberella zeae cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -CTCTCCATGGCTGCTTTC
                                           - CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                               634
32
89
89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   608
                                                                      99
                                                                                                                                                         206
                                                                                                                                                                                      59
                                                                                                                                                                                                                                              40
                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                      20
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 25
BU064409
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                    ş
                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                 Query Match:
                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                          US-10-081-935-4 (1-194) x BU064409
                                                                                                                                                                                           Score:
                                                                                                                                                                                                                     Alignment
                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                        . No. :
                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         119
 132
                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Frances Trail
Department of Plant Biology
Michigan State University
East Lansing, MI 48824, USA
Tel: 517 432 2939
Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282 AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCCACC 338
                     21 ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BU064409
Fgr_4_M16_T3
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Trail, F., Xu, J.-R., San Miguel, P., H
halysis of expressed sequence tags
Fusarium graminearum)
Fungal Genet. Biol. 38 (2), 187-197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BU064409
                                                                   ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GluproThrAlaValProThrGlyThrGlyGlyValProThrGlyThrGlySerPhe 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaGluProThrAlaGluProThr------AlaGluProThrHisGluProThrGlu
GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGCTGCCTCAAGGGTCTCGGTGCC----CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 657)
                                                                                                                                                                                                                                                               137
                                                                                                                                                                                                                                                                                                                                                           trail@msu.edu
4 row: M column: 16
Location/Qualifiers
1. .657
                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                            /mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                                                             /organism="Gibberella
                                                                                                                                   0.00131
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:22504698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          657 l
Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        San Miguel,P., Halgren,R.G. and ed sequence tags from Gibberella
                                                                                                       (1-657)
                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bp mRNA linear
i mycelia Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (2003)
                                                                                                                                    89
89
84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            r EST 26-AUG-2002
zeae cDNA, mRNA
                                                                                                                                                                                                                                                                            Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         zeae (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kistler, H.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      515
                                                      131
```

```
BASE COUNT
ORIGIN
       Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 26
BU060530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BU060530
Fgr-C_1_E06_T3 (
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41
                                                                                                                                                                                                                                                               Contact: Frances Trail
Department of Plant Biology
Michigan State University
                                                                                                                                                                                                                                                                                                                                                    Trail, F., Xu, J.-R., San Miguel, P., Halgren, R.G. and Analysis of expressed sequence tags from Gibberella Fusarium graminearum)
                                                                                                                                                                                           Email: trail@msu.edu
Plate: 1 row: E co
                                                                                                                                                                                                                                                                                                                                                                                                          Gibberella zeae

Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gibberella
                                                                                                                                                                                                                                                                                                                12620255
                                                                                                                                                                                                                                                                                                                                        Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BU060530.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCACCGCCGCTGCCACCACTGTCGCTCCCATCATTCCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGCTGCTCGAAGGGTCTCGGTGCC----CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCGCCACCAGCACCCCGCCGCCGCCACCACCAAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG----GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC--- 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                        t Lansing, MI 4
: 517 432 2939
: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 664)
                                                                   139
                                                            /organism="Gibberella zeae"
/mol_type="mRNA"
/strain="NRRL 31084"
/db_xref="texon:5518"
/clone_lib="Carbon-starved_mycelia"
/note="Vector: Uni-ZapII; Site_1: EcoRI; Site_2:
241 c 155 g 129 t
                                                                                                                                                                               row: E column: 06.
Location/Qualifiers
                                                                                                                                                                   . .664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:22500819
          .00132
                                                                                                                                                                                                                                                      MI 48824, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              664 |
Carbon-starved
         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bp mRNA linear EST 26-AUG-2002
d mycelia Gibberella zeae cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----CTTCCCGCTACCGAGAACCTCTGC
       664
                                                                                                                                                                                                                                                                                                                                                                   Kistler, H.C.
zeae (anamor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    809
                                                                                                                                                                                                                                                                                                                                                                  (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443
                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                   RESULT 27
BU065008
LOCUS
                                                                                                                                                                                                                   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                . ହ
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                           COMMENT
                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-081-935-4 (1-194)
                                                                                    JOURNAL
MEDLINE
PUBMED
                                                                                                                                             TITLE
Contact: Frances Trail
Department of Plant Biology
Michigan State University
East Lansing, MI 48824, USA
Tel: 517 432 2939
Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                         176
                                                                                                                                                                                                                                                                                                                                                                                                                                     512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21
                                                                                                         Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.

(bases 1 to 696)

Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H., Analysis of expressed sequence tags from Gibberella zeae (anameuserium graminearum)

Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                      Fgr_6_G07
                                                                                                                                                                                                                  Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                 Gibberella zeae
                                                                                                                                                                                                                                                             BU065008.1
                                                                                                                                                                                                                                                                                                 _G07_T3
                                                                                                                                                                                                                                                             GI:22505297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             x BU060530
                                                                                                                                                                                                                                                                                                      Nitrogen-starved
                                                       Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (1-664)
                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                      mycelia
```

155 511

451

mRNA linear lia Gibberella z

r EST 26-AUG-2002 zeae cDNA, mRNA

```
Score:
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                        335 AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCACC 391
GGTGCTGCTCAAGGGTCTCGCTGCC-----CTCGCCATGGCTGCTTTC
                                             ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                  ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                        GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                                                                                                                            AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                            ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                                                                                                                                                                                                                                                              ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----CTTCCCGCTACCGAGAACCTCTGC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches:
Conservative:
```

```
Best Local Si
Query Match:
DB:
                                                                         RESULT 28
BU066113
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE
                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
                                                                                                                  밁
                                                                                                                                5
                                                                                                                                                          망
                                                                                                                                                                             ર્
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                     ઇ
                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-4 (1-194) x BU065008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
 SOURCE
                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                392
                                                                                                                   569
                                                                                                                                       176
                                                                                                                                                                                                                                                                                                               100
                                                                                                                                                                                                                                                                                                                                                                             260
                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                           41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                   BU066113
Fgr_9_G08_T3
sequence.
                                                                                                                                                                                                                                                                                                                                                        90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email:
Plate:
EST.
Gibberella zeae
Gibberella zeae
                                        BU066113
                               BU066113.1
                                                                                                                                                                                                                                                                                                      AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                   GGTGCTGCTGGCCTCAAGGGTCTCGGTGCC-----
                                                                                                                               ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr
                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCCT
                                                                                                                                                            CCCGCCACCAGCACCCCCGCCGCCGCCACCCCTACCAAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                        ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                      ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                          GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                   AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                        ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                             ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                 ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                         ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                               ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                          AAGAACCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    trail@msu.edu
6 row: G co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Gibberella zeae"
/mol type="mRNA"
/strain="NRRL 31084"
/db_xref="taxon:5518"
/clone_lib="Nitrogen-starved mycelia"
/note="Vector: Uni-Zap!I; Site_1: EcoRI;
10248 c 162 g 135 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0.00139
167.00
42.93%
26.77%
16.32%
                               GI:22506402
                                                               Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (1-696)
                                                                                                                                                                                                                                                                                                                                    -----CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                             bp mRN
d mycelia
                                                               mRNA linear
ia Gibberella z
                                                                                                                   -CTCGCCATGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53
32
89
24
                                                             ar EST :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Site_2:
                                                             CDNA,
                                                                         26-AUG-2002
                                                                                                                   616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  XhoI"
                                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                      511
                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                               451
                                                                                                                                                                                                                                                                                          391
                                                                                                                                                                                                                                                                                                                                    334
                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                            310
                                                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE
               ર્
                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                      ફ
                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                         밁
                                                                               g
                                                                                                     5
                                                                                                                           망
                                                                                                                                          ð
                                                                                                                                                                     밁
                                                                                                                                                                                        ક
                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                          S
                                                                                                                                                                                                                뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scores:
514
                    156
                                       454
                                                             136
                                                                                  394
                                                                                                      119
                                                                                                                           337
                                                                                                                                                 100
                                                                                                                                                                      313
                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                    60
                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                               41
                                                                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12620255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . .699
```

```
US-10-081-935-4 (1-194) x BU066113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Department of Plant Biology
Michigan State University
East Lansing, MI 48824, USA
Tel: 517 432 2939
Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypocreomycetide; Hypocreales; Nectriaceae; Gibberella.

1 (Dases 1 to 699)
Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H.C.
Analysis of expressed sequence tags from Gibberella zeae (anamorph Fusarium graminearum)
Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Fungi; Ascomycota; Pezizomycotina;
CCCGCCACCAGCACCCCCGCCGCCGCCGCCACCCAACCAAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                                                                                                                                                            AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrargLeuThraspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCC/TCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCCGCTCAGGCTCAGTCTCTT

      MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu

      |||:::::||| ||| :::||||| |||

                             ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn 175
                                                                                                                                   {\tt GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe}
                                                                                                                                                                               ACCACCGCCGCTGCCACCTTCGTCGTTCGTCACCACCACCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                     ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                              AlaGluProThrAlaGluProThr ------AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                            AAGAACCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCGAG----GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                       ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             trail@msu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Gibberella zeae"
/mol type="mRNA"
/strain="NNRL 31084"
/db_xref="taxon:5518"
/clone_lib="Nitrogen-starved mycelia"
/note="Vector: Uni-ZapII; Site_1: EcoRI;
249 c 162 g 136 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       row: G column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       row: G column: 08
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.0014
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (1-699)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                           - CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53
32
89
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     XhoI "
                                                                                          513
                                                                                                                                        155
                                                                                                                                                                                    453
                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                              393
                                                                                                                                                                                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
```

```
RESULT 29
BU064737
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
   밁
                           S
                                                                  밁
                                                                                             5
                                                                                                                                  밁
                                                                                                                                                               á
                                                                                                                                                                                                  В
                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                 용
                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                 US-10-081-935-4 (1-194) x BU064737 (1-718)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                     No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176
 311
                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             571
                                                                                                   60
                                                                                                                                                                   41
                                                                                                                                                                                                                                 21
                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 '(bases 1 to 718)
Trail, F., Xu, J.-R., San Miguel, P., Halgren, R.G. and Kistler, H.C. Analysis of expressed sequence tags from Gibberella zeae (anamorph Fusarium graminearum)
Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     East Lansing, MI Tel: 517 432 2939 Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Department of Plant Biology Michigan State University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fgr_5_K14_T3 Nitrogen-starved sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: trail@msu.edu
Plate: 5 row: K column: 14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BU064737.1 GI:22505026
                                                                                                                                                                                                                            ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                    ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                        ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                              TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT 259
                                                                                                                                                                                             GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC 199
                               ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                               ThrargLeuThraspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle 59
                                                                                                                                                                                                                                                                 ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGCTGGCCTCAAGGGTCTCGGTGCC----CTCGCCATGGCTGCTTTC
                                                                ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db xref="taxon:5518"
/clone_lib="Nitrogen-starved mycelia"
/clone="Vector: Uni-ZapII; Site_1: EcoRI;
/note="Vector: Uni-ZapII; Site_1: EcoRI;
253 c 168 g 140 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Gibberella
/mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                  0.00144
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MI 48824,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          718 bp mRNA linear EST 26-AUG-2002
                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     zeae"
-CTTCCCGCTACCGAGAACCTCTGC 33
                                                                                                                                                                                                                                                                                                                                                                718
53
32
89
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Site_2: XhoI"
```

```
PUBMED
COMMENT
В
                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 30
BU064923
LOCUS
                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                      US-10-081-935-4 (1-194) x BU064923
                                                                                                                                                         Pred.
                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                      No.:
                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         452 ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BU064923
Far_6_C13_T3 /
                                                                                                                                                                                                                                                                                                                     Email: trail@msu.edu
Plate: 6 row: C column: 13
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                            Department of Plant Biology Michigan State University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 726)
Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H.C.
Analysis of expressed sequence tags from Gibberella zeae (anamorph Fusarium graminearum)
Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gibberella zeae
Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BU064923.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence
                 ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGCTGCTCAAGGGTCTCGGTGCC-----CTCGCCATGGCTGCTTTC 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                              159
                                                                                                                                                                                                                                                                                                                                                                   Lansing, MI 48824,
517 432 2939
517 353 1926
                                                                                                                                                                                                           /db_xref="taxon:5518"
/clone_lib="Nitrogen-starved mycelia"
/clone_"Vector: Uni-ZapII; Site_1: EcoRI;
/note="Vector: Uni-ZapII; Site_1 EcoRI;
                                                                                                                                                                                                                                                                /organism="Gibberella
/mol_type="mRNA"
/strain="NRRL 31084"
                                                                                 0.00146
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:22505212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nitrogen-starved
                                                      (1-726)
                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  726 bp mRN
rved mycelia
                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VA linear EST 26.
Gibberella zeae cDNA,
                                                                                 726
32
89
84
                                                                                                                                                                                                                       Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST 26-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       511
```

Ş

21 ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40

```
RESULT 31
CD458964
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08
                                                                                                                                                                                                                                                                                                                                                                               Gibberella
Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                            CD458964 BAFC ECORC_FUSARIUM_graminearum_complex_substrate Gibberella zeae cDNA clone Fg08_01h09, mRNA sequence.
                                                                                                                                                                                                    Contact: Watson, Robert.J.
Eastern Cereal and Oilseed Research (
Agriculture and Agri-food Canada
Bldg. 20, Central Experimental Farm,
                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                     A cDNA library prepared complex plant substrate
                                                                                                                                                                                                                                                                                                          Watson,R.J., Heys,R., Chapados,J.,
,J., Lacroix,C., Ouellet,T., Robert
                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                      CD458964
CD458964.1 GI:31373704
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGCTGCCTGAAGGGTCTCGGTGCC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCGCCACCAGCACCCCCCCCCCCCCCCCCACGAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaGluProThrAlaGluProThr -----AlaGluProThrHisGluProThrGlu 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAACCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                      (bases 1 to 841)
                                                                                                                                                                (613) 759-1701
                                                                                                                                                                             (613)
                                                                                                                                      watsonrj@agr.gc.ca.
Location/Qualifiers
/db_xref="taxon:5518"
/clone="Fg08 01h09"
/tissue_type="Mycelium"
/dev_stage="Asexual"
/lab_host="E. coli DH10B"
/clone_lib="Fg08_AAFC_ECORC_F
                                                                                  /mol_type="mRNA"
/strain="DAOM 180378"
                                                                                                            organism="Gibberella
                                                                                                                                                                                                                                                                                                                                                                                zeae
                                                                                                                            . 841
                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                    Fusarium
                                                                                                                                                                                                                                                                                                              Robert, L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----CTTCCCGCTACCGAGAACCTCTGC 342
                                                                                                                                                                                                                                                                                                             Couroux, P., Harris, L.J., Hat
t, L.S., Singh, J.A., Sprott, D.
 _Fusarium_graminearum_complex
                                                                                                                                                                                                       Ottawa,
                                                                                                                                                                                                                                                                                   graminearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               - CTCGCCATGCTGCTTTC
                                                                                                                                                                                                       Ontario,
                                                                                                                                                                                                                                                                                    grown
                                                                                                                                                                                                       KlA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               624
                                                                                                                                                                                                                                                                                                             Hattori
t,D. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE CO
                REFERENCE
AUTHORS
                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                           ACCESSION
VERSION
                                                                                                                                                               RESULT 32
CD458020
LOCUS
                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                        ર્
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment
                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                                                 156
                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                                                                                                                                                                    337
                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                    571
                                                                                                                                                                                                                                              176
                                                                                                                                                                                                                                                                       514
                                                                                                                                                                                                                                                                                                                           454
                                                                                                                                                                                                                                                                                                                                                                                394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
```

```
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-081-935-4 (1-194) x CD458964
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycet Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella. 1 (bases 1 to 867)
Watson,R.J., Heys,R., Chapados,J., Couroux,P., Harris,L.J., J., Lacroix,C., Ouellet,T., Robert,L.S., Singh,J.A., Sprot
                                                                                                                                                                                                           Gibberella
                                                                                                                                Gibberella
                                                                                                                                                                            CD458020.1 GI:31372760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAAGTACTCCGTCGCTTTCGTCGCCTCTCGCCGCTGTTGCCCGCTCAGGCTCAGTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                              GGTGCTGGCCTCAAGGGTCTCGGTGCC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                  ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluproThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCACCGCCGCTGCCACCTCCÁCCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                        ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pBluescript II+; Site_1: EcoRI; Site_2: XhoI; Fusarium graminearum grown on a complex plant substrate-- wheat leaves treated to remove most of the molecular weight, water-soluble components."

a 270 c 200 g 179 t l others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.00172
167.00
42.93%
26.77%
16.32%
                                                                                                                 zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (1-841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                              -CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
32
32
89
                                                                    ; Sordariomycetes; Gibberella.
                                                                                                                                                                                                                                                                                                                                                   618
      Hattori
t,D. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              104
```

```
Best Local Si
Query Match:
DB:
                              ક
                                                                       밁
                                                                                                   ঠ
                                                                                                                                                                  Ś
       밁
                                                                                                                                       문
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                     ર્
                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                             용
                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-081-935-4 (1-194) x CD458020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NO
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
     454
                                     136
                                                                       394
                                                                                                       119
                                                                                                                                       337
                                                                                                                                                                         100
                                                                                                                                                                                                           313
                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                                              202
                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                    21 ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Watson, Robert.J.

Eastern Cereal and Oilseed Research Centre
Agriculture and Agri-food Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A cDNA library prepared from Fusarium graminearum grown on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complex plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: watsonrj@agr.gc.ca
ACCACCGCCGCTGCCACCACCACCACCACCATCATTCCCACCACCACCGCTGCTGAGGAG
                                GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                   AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCGAG---GAGGAGAAGCCCACC
                                                                                                                                                       AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                       ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                         TGTGACAAGÁCCGÁCCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                 ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                       ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                             GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                           ThrargLeuThraspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGAAGTACTCCGTCGCTTTCGTCGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                         ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (613) 759-1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20, Central Experimental Farm, Ottawa,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (613) 759-1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      xhol; Fusarium graminearum grown on a complex plant—
substrate-- wheat leaves treated to remove most of the low
molecular weight, water-soluble components."

273 c 207 g 183 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db xref="taxon:5518"
/db xref="taxon:5518"
/clone="F908_Olh09"
/tissue_type="Mycelium"
/dev_stage="Asexual"
/lab_host="E. coli_DH10B"
/clone_lib="F908_AAFC_ECORC_Fusarium_graminearum_complex_s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Gibberella zeae"
/mol_type="mRNA"
/strain="DAOM 180378"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pBluescript II+; Site_1: EcoRI; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ubstrate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.00178
167.00
42.93%
26.77%
16.32%
                                                                                                                                                                                                     -----CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (1-867)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    867
32
89
84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ontario,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KlA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                   393
 513
                                 155
                                                                   453
                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                           59
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 33
BM868215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
                                                                                                                           Pred. No.:
                                                                                                                                                 Alignment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FLATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             514 CCCGCCACCAGCACCCCGCCGCTGCCACCCCTACCAAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      156 ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: d-ebbole@tamu.edu
Chromatogram file of this sequence is available, see contact problem to the contact problem is the contact problem of the contact problem is ACI (Agral. 22, 2003) gb|AAN64312.1| MACI interacting protein 1; ACI (Magnaporthe gri. . . 179 3e-44
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  On Mar 7, 2002 this sequence version replace Contact: Ebbole DJ Department of Plant Pathology & Microbiology Texas A&M University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peterson Bldg, MS2132, College
Tel: 979 845 4831
Fax: 979 845 6483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BM868215

mgcs013xP19f.b Magnaporthe grisea
grisea cDNA clone mgcs013xP19 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plate: mgcs013 row: P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: T3 primer
BACKWARD: T7 prime:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Expressed sequence tags from the rice blast fungus, Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 606)
Ebbole, D.J., Yuan, J., Thomas, T.L., Bobrowicz, P., Lu, G., Bhatterai, K. and Dean, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sordariomycetes incertae sedis; Magnaporthaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Magnaporthe grisea (anamorph: Pyricularia grisea
Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BM868215.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BM86821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGCTGCGGCTCAAGGGTCTCGGTGCC-----CTCGCCATGGCTGCTTTC 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        primer: T3.
                                                                                                                                                                                                                        115
                                                                                                                                                                                              /clone="mgcs013xp19"
/sex="mgcs013xp19"
/sex="mgcs013xp19"
/cell_type="conidia"
/cell_type="conidia"
/clone lib="Mggnaporthe grisea CS Uni-Zap XR Library"
/clone lib="Mggnaporthe grisea CS Uni-Zap XR Library"
/clone lib="Mggnaporthe grisea CS Uni-Zap XR Library"
/clone lib="Mggnaporthe grisea CS Total Side has T3 primer and
predominantly 5' reads. T7 primer on XhoI side of insert.
Conidial library. Point inoculation of Guyll at center of
oatmeal agar plate. Conidia were harvested after two weeks
of growth. Sequences were processed by one of two methods.
Where a full-length alignment to the M. grisea genome
sequence was available, the EST sequence was trimed
according to the alignment, otherwise sequence quality was
assessed using phredPhrap version 991019 and trimmed
according to phd files (0.05) and for vector seqs."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mo1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . . 606
0.00143
166.00
42.94%
30.51%
16.23%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:30393206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           xref="taxon:148305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     version replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Station, TX 77843-2132, USF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               grisea"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA linear EST 06-MAY-2003
CS Uni-Zap XR Library Magnaporthe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gi:19235897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         see contact person
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Magnaporthe.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             570
```

Percent Similarity:
Best Local Similarit
Query Match:
DB:

Similarity:

Length: Matches: Conservative: Mismatches: Indels:

54 54 67 34

Score:

```
RESULT 34
BU064561
LOCUS
                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-081-935-4 (1-194) x BM868215 (1-606)
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                     COMMENT
                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                               JOURNAL
MEDLINE
PUBMED
                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
                                                                                                                                                                                                                                                                                                                                                                                                                                                     144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        127
                                                                                                                                                                                                                                                                                                                                                                                                                            460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                 Department of Plant Biology
Michigan State University
East Lansing, MI 48824, USA
                                                                                                                                                                                                      Trail, F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H.C. Trail,F., Xu,J.-R., San Miguel, B., Halgren,R.G. and Kistler,H.C. Analysis of expressed sequence tags from Gibberella zeae (anamorph Fusarium graminearum)
Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                           Gibberella zeae
Gibberella zeae
                                                                                                                                                                                                                                                                                                                   BU064561.1
EST.
                                                                                                                                                                                                                                                                                                                                           BU064561
                                                                                                                                                                                                                                                                                                                                                                 Fgr_5
                                                                                                                                                                                                                                                                                                                                                                               BU064561
                                                                                                                                                                      Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |||||||::::::::|||||||
TGCGTGCAAAAGAGCTGCCCAGAGTCTGAGTTCCAAAAGACCATTGACGGATCTGACAAG 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CysValGluGluAlaCysPro------LeuAspAlaArgIleSerValSerAsnIle 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuThrAspPheLysCysHisCys---SerLysProGluLeuProGlyGlnIleThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGTCCTGGTTGCCGGTGTCGCCACGGCCCAGGACTGCATCAGCGTCGCGCTGTCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                           GTGGGTGGTGCGCTATGGGTAGCCCTTGGGCTGTGAGCATTGACGAGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluProThrAlaGluProThrHisGluProThrGluGluProThrAlaValProThrGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCTGC---ACGTGCGCTTCTGGAGGT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ValValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThr 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---ACCGACTTCAAGTGCCAGTGCCAGCAGCAGGCCAAGATGTTTGCCGCCGTCGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCCCGTCGTGCGCGCAGCCGTGCTTCCTCAACGGCGCCCCGACCATTGGCTGCTCCGGC 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AlaLeuValAlaAlaGlyLeuAlaSerAlaGln------
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyArg 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGCCCACTGCC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTCTCCCACCACCACCGTCGCAGCCCCGACCGGAACACCGTCTGGCCGACCCTCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaGluproThr-----AlaGluproThrGluGluproThrAlaGluproThrAla 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCGGGGCGCCGGAAATACCGTCAACCCGTCCAGCTTCATCCCAGGCCCGACGTCGACT 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlaAla-----
                                                                                                         t Lansing, MI 4: 517 432 2939
                                                                                                                                                                                                                                                                                                                                                              _D02_T3
                                                                     trail@msu.edu
5 row: D column: 02
Location/Qualifiers
/strain="NRRL 31084"
/db_xref="taxon:5518"
/clone_lib="Nitrogen-starved
                                   /mol_type="mRNA"
                                                organism="Gibberella
                                                              . 696
                                                                                                                                                                                                                                                                                                                              GI:22504850
                                                                                                                                                                                                                                                                                                                                                                  Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96 pp
                                                                                                                                                                                                                                                                                                                                                                   bp mRNA linear EST 26-AUG-2002
mycelia Gibberella zeae cDNA, mRNA
  mycelia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProGluProSerGluThr 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -CCCGCTTCAAACAAC 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -LeuProAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                         SOURCE
ORGANISM
                                                           REFERENCE
AUTHORS
                                                                                                                                                                                            RESULT 35
CD460963
LOCUS
                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
DB:
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment
                                                                                                                                                                                 DEFINITION
                                                                                                                                  KEYWORDS
  JOURNAL
                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                                         335
                                                                                                                                                                                                                                                                                            512
                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                          392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                             569
                                                                                                                                                                                                                                                                    175
                                                                                                                                                                                                                                                                                                                                           452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              μ
             substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S)
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-081-935-4 (1-194) x BU064561
                                                                                                                                                                                                                   CD460963

Eg09_03i13_A Fg09_AAFC_ECORC_FUSArium_graminearum_simple_substrate
Gibberella zeae cDNA clone Fg09_03i13, mRNA sequence.
               1 (bases 1 to 822) Watson,R.J., Heys,R., Couroux,P., De Moors,A., Harris,L.J., Hattori,J., Lacroix,C., Masotti,M., Ouellet,T., Robert,L.S., Singh,J.A., Sprott,D. and Tinker,N.A.
                                                                                        Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                               Gibberella
                                                                                                                                                                                      CD460963.1 GI:31375703
A cDNA library prepared from Fusarium
                                                                                                                                                 Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                  nValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                               GCCCGCCACCAGCACCCCCCCCCCCCCCCCCCACCCCTACCAAGGGTCCC---GAGCAGGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAsp-ThrThrAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                         CGGTGCTGCTGGCCTCAAGGGTCTCGGTGCC-----CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                   eThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          uGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rAlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGl 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCGAG---GAGGAGAAGCCCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: Uni-ZapII;
249 c 161 g 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.00167
166.00
44.22%
27.64%
16.23%
                                                                                                                                                 zeae
                                                                                                                                 zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (1-696)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Site_1: EcoRI;
graminearum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         55
33
86
25
grown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Site_2:
 on a simple
                                                                                                                                                                                                                                                                                                                                           617
                                                                                                                                                                                                                                                                                                                                                                                                                                                         175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                   868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           259
```

```
Ś
                                                                                      밁
                                                                                                                 á
                                                                                                                                                                       Ś
   Ś
                                                                                                                                             밁
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-081-935-4 (1-194)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        о
. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match:
                                                                                      454
                                                                                                                  135
                                                                                                                                             394
                                                                                                                                                                                                                                                               313
                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                       262
                                                                                                                                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                          41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eastern Cereal and Oilseed Research Centre
Agriculture and Agri-food Canada
Bldg. 20, Central Experimental Farm, Ottaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Watson, Robert.J.
nValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                           GCCCGCCACCAGCACCCCGCCGCCACCCCTACCAAGGGTCCC---GAGCAGGCCAA
                                                    eThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAs
                                                                                                                                         ACCACCGCCGCTGCCACCTCCACCTTGGTCGTTGTCACCACCASGCGCCGAGGTTGTTGA
                                                                                                                                                                                                                           AlaProGluProSerGluThr --- AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAAGTACTCCGTCGCTTTCGTCGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                   GACCACCGCCGCTGCCACCÁCCACTGTCGCTCCCATCATTCCCÁCCACCGCTGCTGAGGA
                                                                                                               uGluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPh
                                                                                                                                                                                                                                                                                     ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                               ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                      Ala-GluProThrAlaGluPro-----ThrAlaGluProThrHisGluProThrGl
                                                                                                                                                                                                  AAGAACCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG----GAGGAGAAGCCCACC
                                                                                                                                                                                                                                                                                                                                                                            TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                        ThrargLeuThraspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                  ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (613) 759-1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (613) 759-1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 watsonrj@agr.gc.ca.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Vector: pBluescript II+; Site_1: EcoRI; Site_2: XhoI; Fusarium graminearum grown on a simple substrate--minimal media supplemented with amino acids."

267 c 195 g 172 t 4 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="Mycelium"
/tissue_type="Asexual"
/dev_stage="Asexual"
/lab_host="E. coli_DH10B"
/clome_lib="Fg09_AAFC_ECORC_Fusarium_graminearum_simple_su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bstrate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Gibberella
/mol_type="mRNA"
/strain="DAOM 180378"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone="Fg09_03i13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           db_xref="taxon:5518"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.002
166.00
43.22%
27.14%
16.23%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     x CD460963 (1-822)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ottawa,
                                                                                                                                                                                                                                                          -CTTCCCGCTACCGAGAACCTCTGC 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ontario, KIA 0C6
                                                                                                                                                                       135
                                                                                                                                                                                                                                                                                                                                               79
                                                                                                                                          453
                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BU064419
LOCUS
                                       밁
                                                                S
                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                밁
                                                                                                                                                       밁
                                                                                                                                                                               ş
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                           Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                  No.:
                                                                                               260
                                                                                                                          60
                                                                                                                                                                                  41
                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               East
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fgr_4_N02_T3
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BU064419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BU064419.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
```

```
US-10-081-935-4 (1-194) x BU064419
200 TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                   140 GCCGACGTCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    571 CGGTGCTGGCCCCAAGGGTCTCGGTGCC-----CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                      1 MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gibberella zeae

Eukaryota; Pungi; Ascomycota; Pezizomycotina; Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Department of Plant Biology Michigan State University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 611)
Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H.C. Analysis of expressed sequence tags from Gibberella zeae (anamor Fusarium graminearum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fungal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypocreomycetidae;
                                                                                                                                                                              ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal
                                                                                                                                                                                                                                                       ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                  ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                                                                                                                                                                                                                                                                                                                             ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                                                                                                 ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                           ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lansing, MI 48824,
517 432 2939
517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        trail@msu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /strain="NAKAD JOE-
/db_xref="taxon:5518"
/clone_lib="Nitrogen-starved mycelia"
/note="Vector: Uni-ZapII; Site_1: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   row: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Gibberella
/mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.00188
164.50
40.61%
26.40%
16.08%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:22504708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypocreales; Nectriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1-611)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                            -----CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                611 bp mRNA linear EST 26-AUG-2002
arved mycelia Gibberella zeae cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from Gibberella zeae (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          611
52
28
88
89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      619
                                                            334
                                                                                                                                                                                79
                                                                                                                                                                                                                                                             59
                                                                                                   99
                                                                                                                                         310
                                                                                                                                                                                                                        259
```

```
RESULT 37
BU065692
LOCUS
                                                                                                                     Best Local Si
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
   밁
                       Ś
                                                밁
                                                                       Ś
                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                              US-10-081-935-4 (1-194) x BU065692 (1-611)
                                                                                                                                                                     Score:
                                                                                                                                                                               Alignment Scores: Pred. No.:
                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                            Local Similarity:
                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                156
   140
                        21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BU065692
Fgr_8_E01_T3 l
sequence.
BU065692
                                                                                                                                                                                                                                                                                                                                                           Michigan State University
East Lansing, MI 48824, USA
Tel: 517 432 2939
Fax: 517 353 1926
                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Frances Trail
Department of Plant Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Trail,F., Xu,J.-R., San Miguel,P., Halgren,R.G. and Kistler,H.C. Analysis of expressed sequence tags from Gibberella zeae (anamor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gibberella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BU065692.1
                                                                                                                                                                                                                                                                                                                                      Plate: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fungal Genet. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fusarium graminearum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypocreomycetidae; Hypocreales; Nectriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Fungi; Ascomycota; Pezizomycotina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe 155
 GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC 199
                      ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys 40
                                                                   MetGlnPheSerHisAlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCGCCACCAGCACCCCCGCCGCCGCCACCCCTACCAAGGGTCCCGAGCAGGCCAACGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCACCGCCGCTGCCACCTTCGACCTTGGTCGTCACCACCAGCGCCGAGGTTGTTGAG 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 611)
                                                                                                                                                                                                                             128
                                                                                                                                                                                                                                                                                                                                       trail@msu.edu
8 row: E co
                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                             /mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                  organism="Gibberella
                                                                                                                                                                                                                                                                                                             . .611
                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                               db_xref="taxon:5518"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           zeae
                                                                                                                      0.00188
164.50
40.61%
26.40%
16.08%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:22505981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              611 l
Nitrogen-starved
                                                                                                                                                                                                                                                                                                                                       column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         38 (2), 187-197 (2003)
                                                                                                                                                                                                                            ß
                                                                                                                                                                                                                                                                                                                                       01
                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGCTGGCCTCAAGGGTCTCGGTGCC 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp mRNA linear
d mycelia Gibberella
                                                                                                                                                                                                                             Site_1: EcoRI;
                                                                                                                      52
52
28
88
29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 r EST 26-AUG-2002
zeae cDNA, mRNA
                                                                                                                                                                                                                                       Site_2: XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     391
                                               139
                                                                       20
                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 38
AU284313
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
Alignment Scores: Pred. No.:
                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41
                                               229
```

```
AU284313
AU284313
Dictyostelium discoideum FC (H.Urushihara) Dictyostelium discoideum cOH.Urushihara)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tanaka, Y. and Urushihara, H. Generation and analysis of a gamete-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 612)
Muramoto, T., Suzuki
                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 81-298-53-4664
                                                                                                                                                                                                                                                                                                                                                                                                                                                University of Tsukuba
1-1-1 Tennoudai, Tsuk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Institute of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Hideko Urushihara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dictyostelium discoideum (2002b)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dictyostelium discoideum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AU284313.1 GI:23034403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAla 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGAACCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCCGAG---GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ThrArgLeuThrAspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCACCGCCGCCGCCACCTCCACCTTGGTCGTTGTCACCACCAGCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCGCCACCAGCACCCCCCCCCCCCCCCCCCCCCACCCCCAACGGTCCCGAGCAGGCCAACGGT
                                                                                                                                                                                                                                                                                                                                                                                                    81-298-53-6614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                                                                                                                                                                                                                                                                               hideko@biol.tsukuba.ac.
                                                                                              /tissue_type="gamete"
/dev_stage="Sexual"
/clone_lib="Dictyostelium
164 c 62 g 157
                                                                                                                                                                                                                                                            /organism="Dictyostelium
/mol_type="mRNA"
/strain="KAX3"
                                                                                                                                                                                                              db_xref="taxon:44689"
clone="FC-AK17"
                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                             sex="mat A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suzuki, K., Shimizu, H.,
    00206
                                                                                                                                                                                                                                                                                                                                                                                                                                                Tsukuba,
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ibaraki
Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   305-8572,
                                                                                                 discoideum
t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kohara, Y., Koriki, E.,
    612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene pool in
                                                                                                                       FC
                                                                                                                       (H.Urushihara)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Obara,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          451
```

```
Score:
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 39
BU061554
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
     Best Local Similarity:
Query Match:
DB:
                                  Score:
Percent Similarity:
                                                                        Alignment
                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-081-935-4 (1-194) x AU284313 (1-612)
                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                     PUBMED
                                                             No.:
                                                                        Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fgr_10_D2;
sequence.
BU061554
                                                                                                                                                                                                                                           East
Tel:
                                                                                                                                                                                                                                                                                                                                                                                                      Gibberella
                                                                                                                                                                                                                                                                  Department of Plant Biology Michigan State University
                                                                                                                                                                                                                                                                                        Contact: Frances Trail
                                                                                                                                                                                                                                                                                                                       Eukaryota, Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.

1 (bases 1 to 643)

Trail, F., Xu, J.-R., San Miguel, P., Halgren, R.G. and Kistler, H.C. Analysis of expressed sequence tags from Gibberella zeae (anamor Fusarium graminearum)

Fusgal Genet. Biol. 38 (2), 187-197 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                        BU061554.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BU061554
                                                                                                                                                                                                                                                                                                                                                                                                                 ibberella zeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAACACCAACACCAAACCCAGGT---AATTGTAATGTTAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProThrGlyThrGlySerPheThrValThrGlyArgProThr------AlaSerThr 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVal 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAACTGAAACTCCAACTCAAACTCCAACTGAAACTCCAACCCAAACCCCAACACAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAACTGAAACTCCAACTGAAACTCCAACTGAAACTCCAACTCAAACTCCAACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProThrHisGluProThrGluGluProThrAlaValProThrGlyThrGlyGlyGlyVal 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAACTGAAACTCCAACTGAAACTCCAACTGAAACTCCAACTGAAACTCCAACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAACTGAAACTCCAACTCAAACACCAÁCTCAAACACCAACTGAAACTCCAÁCCCAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProIleAspIleProProValAspThrThrAlaAlaProGluProSerGluThrAlaGlu
                                                                                                         131
                                                                                                                                                                                                                              517 432 2939
517 353 1926
                                                                                                                                                                                                                                                    Lansing, MI 48824,
                                                                                                                                                                                                            10 row: D
                                                                                                                                                                                                                      trail@msu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D22_T3 Nitrogen-starved
                                                                                                         a
                                                                                                     /db_xref="taxon:5518"
/clone_lb="Nitrogen:starved mycelia"
/clone_lb="vector: Uni-ZapII; Site_1: EcoRI; Site_2: XhoI"
/note="Vector: Uni-ZapII; Site_1: EcoRI; Site_2: XhoI"
                                                                                                                                                                                       Location/Qualifiers
1. .643
                                                                                                                                                  organism="Gibberella
/mol_type="mRNA"
/strain="NRRL 31084"
                                                                                                                                                                                                                                                                                                                                                                                                       zeae
    0.00218
164.00
42.42%
26.77%
16.03%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     164.00
45.26%
42.11%
16.03%
                                                                                                                                                                                     . 643
                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:22501843
                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  643
  Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ďď
                                                                                                                                                                           zeae"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        p mRNA linear
mycelia Gibberella
   643
53
31
90
24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 4 8 3 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        zeae cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-AUG-2002
                                                                                                                                                                                                                                                                                                                                              (anamorph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128
                                                                                                               JOURNAL COMMENT
                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                     RESULT 40
CD459301/c
                      FEATURES
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-081-935-4 (1-194) x BU061554 (1-643)
                                                                                                                                                                                                                                                                                                            Pocus
                                                                                                                                               TITLE
                                                                                                                                                                                                                             ORGANISM
           source
                                                                                                                                                                                                                                                                                                                                                       579
                                                                                                                                                                                                                                                                                                                                                                              176
                                                                                                                                                                                                                                                                                                                                                                                                    522
                                                                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                                                                                                                                                                                                                                                                                                                                                               462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲
                                                                                                                                                                                                                                       Gibberella zeae
                                                       (613) 759-1655
/organism="Gibberella
             . 874
```

```
Gibberella zeae
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
Hypocreomycetidae; Hypocreales; Nectriaceae; Gibberella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21 ProAspIleProProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCys
                                                                                                                                                                                                                                          Tinker, N.A.
A cDNA library prepared from complex plant substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PG08_03a11_A Fg08_AAFC_ECORC_FUBBARIUM_graminearum_complex_substrate Gibberella zeae cDNA clone Fg08_03a11, mRNA sequence.
                                                                                                                                            Contact: Watson, Robert.J.

Eastern Cereal and Oilseed Research Centre
Agriculture and Agri-food Canada
                                                                                                                                                                                                                                                                                                                    Watson, R.J., Heys, R., Chapados, J., Courous, J., Lacroix, C., Ouellet, T., Robert, L.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CD459301.1 GI:31374041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGCTGCTCAAAGGGTCTCGGTGCC-----CTCGCCATGGCTGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GluProThrAlaValProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ValArgAlaSerValGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAlaAlaTyr 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCGCCACCAGCACCCCCGCCGCTGTCACCCCTACCAAGGGTCCC---GAGCAGGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ThrValThrGlyArgProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCACCGCCGCTGCCACCTTCGTCGTTCGTCACCACCACCGCCGAGGTTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCACCGCCGCTGCCACCACCACTGTCGCTCCCATCATTCCCACCACCACCGCTGCTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaGluProThrAlaGluProThr-----AlaGluProThrHisGluProThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAACCCCCCCAAGGAGTCTGAGGCCAAGTCCACCGCGAG---GAGGAGAAGCCCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaProGluProSerGluThr---AlaGluProThrAlaGluProThrGluGluProThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValAspGlnCysSerLysAlaGlyValProIleAspIleProProValAspThrThrAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTCTTGTGTCATTGACGAGTGTGGTACCGAC-----GTTGCCATCAACGAGGTC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ThrProCysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleVal 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGACAAGACCGACCTCGCCTGTGTCTGCAAGGGCTTCAGCGCTGTCCGATCCAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ThrargLeuThraspPheLysCysHisCysSerLys---ProGluLeuProGlyGlnIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGACGTCCCCAAGTGCGCCATTCCTTGCCTCGACAAGGCCATCGCCAGCGAGACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAAGTACTCCGTCGCTTTCGTTGCTCTCGCCGCTGTTGCCGCTCAGGCTCAGTCTCTT
                    (613) 759-1701
l: watsonrj@agr.gc.ca
                                                                                                                     20, Central Experimental
Location/Qualifiers
                                                                                                                                                                                                                                                                  Fusarium graminearum
                                                                                                                     Farm, Ottawa,
                                                                                                                                                                                                                                                                                                                    Couroux, P., Harris, L.J., H
t, L.S., Singh, J.A., Sprott,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -CTTCCCGCTACCGAGAACCTCTGC
                                                                                                                        Ontario,
                                                                                                                                                                                                                                                                     grown
                                                                                                                        X1A
                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              626
                                                                                                                        900
                                                                                                                                                                                                                                                                                                                         Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
```

```
Alignment :
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-4 (1-194) x CD459301 (1-874)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189
                                                                                                            160
                                                                                                                                                                                                                       324
                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                    107
                                                                                                                                                                                                                                                                                                                                                                         444
                                                                                                                                                                                                                                                                                                                                                                                                                                               504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 741
163
                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                                                            92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProCysAlaLeuAsnCysPheValGluAlaLeuGlyAsnAspGlyCysThrArgLeuThr 44
                                                                                                                                                                                                                       AACGGAACCATGACCAAGACCATGACTGAGGGAGGTGGAYCCGGAGGAGGC-GCTGTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTGCAAGGCCTATGCTGCCACCGCTGGCTCCCGSTCCGCCACTGCCGCTCCCACCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GlnCys-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaLeuIleAlaLeuValAlaAlaGlyLeuAlaSerAlaGln---LeuProAspIlePro
                                                                       TAGCAGTGTCCCTACCGAMGCT-----GGTGCTGGTATTGCTGSCCCYGCTSCCWT 164
                                                                                                                                                                                                                                                                                                                                                                         AGTCTCGGCTCTGTTACCGTCAGCATCGACACCTCTATMACTGGGTCCGCTAGCGTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTTGACCGAAGCTTGCCAGGTTGATGACCTACTCAAGGCCCAGAAAGSTGCCGCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CysValGluGluAlaCysProLeuAspAlaArgIleSerValSerAsnIleValValAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTACCCTCTTCCTCGCTGCTGCCGGCCCCTSTGTCGCTCAGGACCTCAGTGGTCAACCC
                                                                                                         gProThrAlaSerThrProAlaGluPheProGlyAlaGlySerAsnValArgAlaSerVa 180
                                                                                                                                              ACCCACGGAACCTCTGGCGGC-----GGCGGCGGCAGCGGCACCACTGGCGGTGC
                                                                                                                                                                       1ProThrGlyThrGlyGlyGlyValProThrGlyThrGlySerPheThrValThrGlyAr
                                                                                                                                                                                                                                                          rAlaGluProThrHisGluPro------ThrGluGluProThrAlaVa 140
                                                                                                                                                                                                                                                                                                 GCCATCTTCTMAAGCAYCCCTGATGAGAAGCCCATCCCTCCTGTTACTCCCCGTCCCGGC
                                                                                                                                                                                                                                                                                                                                    AlaGluProThrAlaGluProThrGluGluProThrAlaGluProThrAlaGlu-ProTh 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AspPheLysCysHisCysSer-----LysProGluLeuProGlyGlnIleThrPro
 GTGHCCCCTCĠĊĊATTATTGCTGCKGCTATCĠĊŤ
                                   lGlyGlyIleAlaAlaAlaLeuLeuGlyLeuAla 191
                                                                                                                                                                                                                                                                                                                                                                                                            -------IleProProValAspThrThrAlaAlaProGluProSerGluThr 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/strain="pAoM 180378"
/dbxxref="taxon:5518"
/clone="Fg08 03a11"
/tissue_type="Mycelium"
/dev_stage="Asexual"
/lab_host="E. coli DH10B"
/clone_lib="Fg08_AAFC_ECORC_Fusarium_graminearum_complex_s
ubstrate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="Vector: pBluescript II+; Site_1: EcoRI; Site_2: XhoI; Fusarium graminearum grown on a complex plant substrate-- wheat leaves treated to remove most of the molecular weight, water-soluble components."

196 c 275 g 197 t 15 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.00306
164.00
38.21%
30.66%
16.03%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----SerLysAlaGlyValProIleAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
98
34
                                                                                                                                              215
                                                                                                                                                                                                                       266
                                                                                                                                                                                                                                                                                                                                                                         385
                                                                                                                                                                                                                                                                                                                                                                                                                                               445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 682
```

á

В

á

밁

Ş

В

á

В

ઇ

Search completed: December Job time: 1943 secs

9

유

뫄 Ş B Ş 밁 5 밁 Ş 망 Ş

В

욯

```
Title:
Perfect score:
Sequence:
                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                 ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB BG
                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length:
seq length:
           5555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
                                                                                                                                                                                                                                                      nucleic search, using
           100.0
100.0
100.0
                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        November 13, 2003, 06:44:55; Search time 1940 Seconds (without alignments) 651.460 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22781392 seqs, 12152238056 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        atgcagttctctcacgctct...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_estro:*
em_htc:*
gb_est1:*
gb_est2:*
gb_htc:*
gb_est3:*
gb_est3:*
gb_est4:*
gb_est4:*
gb_est6:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_estmu:*
                                                                                                                                                                                                                                                 em_gss_mus:*
em_gss_pro:*
em_gss_rod:*
em_gss_vrl:*
em_gss_vrl:*
gb_gssl:*
gb_gss2:*
                                                                                                                                                                                                                                                                                                                                                                        em gss hum: *
em gss inv:
em gss pln:
em gss vrt: *
em gss fun:
em gss mam:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_estba:*
em_esthum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_estin:*
                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000000000
         395
401
531
557
                                                                                               BB
                                                                                               IJ
         BF251279
BF252856
BF251334
BF252723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sw model
                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .....cgctgccggcctcgccagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45562784
       BF251279 EST418539
BF252856 EST420119
BF251334 EST418594
BF2527723 EST419986
                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 1
BF251279
LOCUS
DEFINITION
                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              იი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0000
                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Coccidioides immitis
Coccidioides immitis
Coccidioides immitis
Eukaryota, Fungi, Ascomycota; Pezizomycotina; Eurotiomycetes;
Eukaryota, Fungi, Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 395)
Gardner,M.J. and Kirkland,T.
Generation of ESTs from Coccidioides immitis spherule cDNA li
                                                                                                                                                                                                                                                                                                                                                                                     BF251279
395 bp mRNA linear EST 15-NOV-2001
EST418539 Coccidioides immitis spherule cDNA library Coccidioides
immitis cDNA clone CIAAFI1 5' sequence, mRNA sequence.
                                                                                                                     Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
                                                                                      Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                             Contact: Malcolm J. Gardner
                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                      BF251279.1 GI:16931422
                                                                                                                                                                                                                                                                                                                                                                          BF251279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gardner@tigr.org.
Location/Qualifiers
/organism="Coccidioides immitis"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1104499
1104499
1104499
1104499
1104499
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11057
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AW730728
AW730728
D BE593376
E BM370328
CB649291
CB648531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA76666

BC4779

AQ743420

BQ662215

CB883923

AL92572

BQ466638

AG035039

CB680101

BU504141

CA354617

CA354617

CA354617

CA354617

CA354617

CA712672

CA712672

CA712672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CB680316
BF864156
BZ574472
AG047770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BF251103
BQ499065
BQ761304
BQ767128
BQ767421
CNS06QTV
BZ235140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BI519263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L38010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                         3
                                                                                                                         20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF251103 EST418360
BQ499065 EST08290
BQ767128 EBT008_SQ
BQ767128 EBT008_SQ
BQ767128 EBT008_SQ
BQ767421 EBT008_SQ
BQ767421 EBT008_SQ
BQ767421 EBT008_SQ
BQ767421 EBT008_SQ
AL411113 T3 end of SQ
BQ767421 EBT008_SQ
AL411113 T3 end of SQ
BQ76669 AF53-Rpf
BZ564779 pacs2-164
AQ743420 HS 5387_BZ5722
BQ46638 HS0781527
CB883923 HS07816u
AL925722 AL9257722
BQ46638 HS078127
BQ5662215 HS07816u
AL925722 AL925772
BQ6663101 OSJNE6104G
BU504141 AGENCOURT
BH222532 1006107G1
BZ547241 OGAKP22TC
BU667306 U002E66.r
BU667306
                                                                                                                                                                                                              cDNA library
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                    RESULT 3
BF251334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
BF252856
LOCUS
                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
                                                                                                                                            밁
                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                              59
                                      BF251334 531 bp mRNA linear EST 15-NOV-2001 EST418594 Coccidioides immitis spherule cDNA library Coccidioides immitis cDNA clone CIAAF68 5' sequence, mRNA sequence.
                                                                                                                                                                          ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF252856 401 bp mRNA linear ES
EST420119 Coccidioides immitis spherule cDNA library C
immitis cDNA clone CIABB70 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
52; Conserv
BF251334.1
EST.
                           BF251334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coccidioides immitis
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 401)
Gardner, M.J. and Kirkland, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Generation of ESTs from Coccidioides immitis spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coccidioides immitie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BF252856.1 GI:16932999
                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Malcolm J. Gardner
                                                                                                                                           ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78
                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                             77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                             Q)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xho1"
                                                                                                                                                                                                                                                                                                   /clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
                                                                                                                                                                                                                                                                                                                                    /dev_stage="spherule"
/lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIABB70"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /dev_stage="spherule"
/lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:5501"
/clone="CIAAF11"
                                                                                                                                                                                                                                                                                                                                                                                                                            . .401
                                                                                                                                                                                                                 100.0%;
               GI:16931477
                                                                                                                                                                                                                                                                             149 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n
                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 52; DB 10;
Pred. No. 1.5e-05;
Mismatches 0;
                                                                                                                                                                                                                Score 52; DB 10;
Pred. No. 1.5e-05;
                                                                                                                                                                                                                                                                          89 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78 g
                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106 t
                                                                                                                                                                                                                                                                             86 t
                                                                                                                                                                                                                                                                                                                                                                                                           immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MD 20850, USA
                                                                                                                                                                                                    0
                                                                                                                                                                                                                              Length 401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 15-NOV-2001
Y Coccidioides
                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                            110
                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12:
                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
RESULT 4
BF252723
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
   BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
     COUNT
                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52;
                                                                                                                                                                                                                      Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Coccidioides immitis
Coccidioides immitis
Coccidioides immitis
Eukaryota, Fungi, Ascomycota; Pezizomycotina; Eurotiomycetes;
Eukaryota, Fungi, Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.

1 (bases 1 to 531)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA li
                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 557)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BF252723 557 bp mRNA linear ES
EST419986 Coccidioides immitis spherule cDNA library C
immitis cDNA clone CIABA21 5' sequence, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Drive, Rockville,
Tel: 301 838 3519
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                            Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes; Onygenales; mitosporic Onygenales; Coccidioides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF252723.1 GI:16932866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                        gardner@tigr.org
 a
                   Xho1
                                                                                                 /mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIABA21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Xho1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIAAF68"
                                                                  /dev_stage="spherule"
/lab_host="SOLR"
                                                                                                                                                 organism="Coccidioides
                                clone_lib="Coccidioides immitis spherule
note="Vector: pBluescript SK(-); Site_1:
                                                                                                                                                                                      location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Coccidioides immitis spherule cDNA library"
note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="spherule"
/lab_host="SOLR"
   197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   190
 ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 52; DB 10;
Pred. No. 1.5e-05;
Mismarches 0;
ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
 133 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119 t
                                                                                                                                                         immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            immitis"
                                                                                                                                                                                                                                                          ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               퓹
                                                                                                                                                                                                                                                        20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Coccidioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                          RESULT 6
BQ499065
LOCUS
                                                                                                        SOURCE
ORGANISM
                                                                                                                                                              DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
BF251103
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                     KEYWORDS
                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 52
       TITLE
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161
                                                                                                                                                                                                                                                                  99
               Paracoccidioides brasiliensis
Paracoccidioides brasiliensis
Eukaryota; Pungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Eukaryota; mitosporic Onygenales; Paracoccidioides

1 (bases 1 to 31)
Goldman, G.H., Marques, E.R., Ribeiro, D.C.D., Bernardes, L.A., Puccia, R., Travassos, L.R., Nobrega, F.G., Nobrega, M.P., Savoldi-Barbosa, M., Semighini, C.P., and Goldman, M.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52;
                                                                                                                                                                                                                                                                                               -
                                                                                                                                                                          BQ499065 311 bp mRNA lir
EST08290 Pb0001 Paracoccidioides brasiliensis
                                                                                                                                                                                                                                                                                                                          Similarity
52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eu
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 737)
Gardner, M.J. and Kirkland, T.
Generation of ESTs from Coccidioides immitis sph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -
                                                                                                                                      EST
                                                                                                                                                 BQ499065
BQ499065.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9712 Medical Center Drive, Rockville, Tel: 301 838 3519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Department of Eukaryotic Genomics
The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BF251103.1 GI:16931246
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BF251103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BF251103 737 bp mRNA EST418360 Coccidioides immitis spherule immitis cDNA clone CIAAC67 5' sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Malcolm J. Gardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coccidioides immitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                              ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                               ATGCAGTTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCAGTTCTCACGCTCTCATCGCTCGCTCGCTGCCGGCCTCCGCCAGTG 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCCGCCCTCGCCAGTG 52
   Paracoccidioides brasiliensis EST genome project
                                                                                                                                                                                                                                                                                                                                                                                                136
                                                                                                                                                                                                                                                                                                                         100.0%;
ilarity 100.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 838 3519
301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gardner@tigr.org.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                  /dev stage="spherule"
/lab_host="SOLR"
/lab_host="SOLR"
/clone_lib="Coccidioides immitis spherule cDNA library"
/note="Vector: pBluescript SK(-); Site_1: EcoR1; Site_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Coccidioides
/mol_type="mRNA"
/db_xref="taxon:5501"
/clone="CIAAC67"
                                                                                                                                                  GI:24452039
                                                                                                                                                                                                                                                                                                                                                                                              271 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 52; DB 10; 100.0%; Pred. No. 1.6e-05;
                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                              168
                                                                                                                                                                                                                                                                                                                       Score 52; DB 10;
Pred. No. 1.6e-05;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             u
                                                                                                                                                                                                                                                                                                                                                                                              162 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immitis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immitis spherule cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear EST 15-NOV-200 CDNA library Coccidioides mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                 Length 737;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                         linear
sis cDNA,
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eurotiomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                      EcoR1; Site_2:
                                                                                                                                                                      mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 15-NOV-2001
                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>,</u>
                                                                                                                                                                                                                                                               150
                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
BQ761304
LOCUS
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
            71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
```

```
Genome Dynamics/Computational Bic
Scottish Crop Research Institute
Invergowrie, Dundee, DD2 SDA, Sco
Tel: 00 44 1382 56731
Fax: 00 44 1382 562426
Email: est@scri.sari.ac.uk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hedley, P., Liu, H., Caldwell, D., McCallum, N., Mudie, S., Ramsay, L., Machray, G., Marshall, D.F. M. and Waugh, R. Development of Barley Transcriptome Resources Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryotic Cell, (2002) In press
Contact: Gustavo Henrique Goldman
Laboratory of Molecular Biology
Universidade de Sao Paulo - USP - FCFRP
Av do Cafe S/N, CEP: 14040-903, Ribeirao Preto - SP, Brazil
Email: ggoldman@usp.br.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence.
BQ761304
BQ761304.1 GI:21969776
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EBro06_SQ001_A05_R root,
Hordeum vulgare subsp. v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Waugh R, Marshall DF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCAGTTCTCACGCTCTCATTGCTCTTGTTGCGGCCAGCCTAGCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                         /db_xref="taxon:112509"
/clone="EBro06 SQ001 A05"
/tissue_type="root"
/dev_stage="3 week"
/lab_host="DH10B"
/note="Vector: pSPORT1; Site 1: Sal 1; Site 2: Not 1; Non-normalised library, directionally cloned into pSPORT1. Derived from roots of 3 week old drought stressed barley plants. After two weeks in control conditions the seedlings were raised above the hydroponic solution for 3 hours daily. N.B. This library has been superseded by EBroO8. Developed as part of the barley transcriptome resources of BBSRC/SEERAD funded cereal IGF (Investigating Gene Function) project."
                                                                                                                                                                                                                                               /clone lib="root, 3 week, drought-stressed, cv
EBro06"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Paracoccidioides
/mol_type="mRNA"
/db_xref="taxon:121759"
/clone_lib="pb0001"
88 c 59 g 91 t
                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="mRNA"
/cultivar="Optic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Hordeum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 39.2; Di
Pred. No. 0.07
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  419 bp mRNA linear EST 26-JUL-2002 t, 3 week, drought-stressed, cv Optic, EBro06 vulgare cDNA clone EBro06_SQ001_A05 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scotland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                           subsp. vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 brasiliensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
-:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 311;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 142
                                                                                                                                                                                                                                                                   Optic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
RESULT 9
BQ767421
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 8
BQ767128
LOCUS
                                                                                                                                   밁
                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
      ACCESSION
                                               DEFINITION
                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 40
                                                                                                                                                                                             Matches
                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity hes 40; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence.
BQ767128
BQ767128.1
EST.
                                                                                                                                   56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                                                                                                                                                             40;
    sequence.
BQ767421
                              BQ767421
EBro08_SQ008_I22_R root,
Hordeum vulgare subsp. vu
                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Waugh R, Marshall DF Genome Dynamics/Computational Biology Scottish Crop Research Institute Invergowrie, Dundee, DD2 SDA, Scotland, UK Tel: 00 44 1382 562731 Fax: 00 44 1382 562426 Email: est@scri.sari.ac.uk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hedley,P., Liu,H., Caldwell,D., McCallum,N., Mudie,S., Ramsay,L., Machtay,G., Marshall,D.F.M. and Waugh,R. Development of Barley Transcriptome Resources Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae
; Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BQ767128
EBro08_SQ008_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hordeum vulgare
                                                                                                                                                                                                        Similarity
                                                                                                                                                 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                   ATGAAGTTCTCCACCACTCTGATTGCCTTCGTTGCCGCCGGCCTCGCCAGCG 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bases 1 to 538)
                                                                                                                                                                                                                                                                    91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                               /note="Vector: pSPORT1; Site_1: Sal I; Site_2: Not I; Non-normalised library, directionally cloned into pSPORT1. Derived from roots of 3 week old drought stressed barley plants. Developed as part of the barley transcriptome resources of BBSRC/SERAD funded cereal IGF (Investigating Gene Function) project."

a 217 c 119 g 111 t
                                                                                                                                                                                                                                                                                                                                                                      /clone_lib="root, 3 week, drought-stressed, cv Optic, EBro08"
                                                                                                                                                                                                                                                                                                                                                                                                 /dev_stage="3 week"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/cultivar="Optic"
/db_xref="taxon:112509"
                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="root"
                                                                                                                                                                                                                                                                                                                                                                                                                                          clone="EBro08_SQ008_E05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Hordeum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:21975602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are subsp. vu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63.1%;
                                                                                                                                                                                                         63.1%;
                                                                                                                                                                                          Score 32.8; D
Pred. No. 6;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 32.8; DB Pred. No. 5.8; 0; Mismatches
                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                vulgare cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     538 bp mRNA linear EST 26-JUL-2002 t, 3 week, drought-stressed, cv Optic, EBro08 vulgare cDNA clone EBro08_SQ008_E05 5', mRNA
                                          602 bp mRNA linear EST 26-JUL-2002
week, drought-stressed, CV Optic, EBroo8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vulgare
                                                                                                                                                                                                                       DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   subsp. vulgare"
                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13;
                                EBro08_SQ008_I22 5',
                                                                                                                                                                                                                       Length
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 419;
                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                            LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                     RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                        CNS06QTV
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 40
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                  $
                                                                                                                                                                                                                                                                                            CNS06QTV
                                                                                                                                                                                                                                                                                                                                                                                                                                          40;
                                                                                                                                                                                                                                     SSD
               20584711
                                                                                                                                                                                                                                                               AL411113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ø
```

```
1 (bases 1 to 994)
Souciet, J.L., Aigle, M., Artiguenave, F., Blandin, G., Souciet, J.L., Aigle, M., Artiguenave, F., Casaregola, S. Bolotin-Fukuhara, M., Bon, E., Brottier, P., Casaregola, S. Bolotin-Fukuhara, M., Dujon, B., Durrens, P., Lepingle, A., Llor de-Montigny, J., Dujon, B., Durrens, P., Lepingle, A., Llor Malpertuy, A., Neuveglise, C., Ozier-Kalogeropoulos, O., F. Saurin, W., Tekaia, F., Toffano-Nioche, C., Wesolowski-Lou
                                                                                                                                                                                                                                               Yarrowia lipolytica
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Dipodascaceae; Yarrowia
Wincker, P. and Weissenbach, J. Genomic exploration of the hemiascomycetous yeasts: 1. Genomic exploration molecular evolution studies FEBS Lett. 487 (1), 3-12 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Dynamics/Computational Biology
Scottish Crop Research Institute
Invergowrie, Dundee, DD2 5DA, Scotlan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae
                                                                                                                                                                                                                                                                                                                                                                                      AL411113.1 GI:12180209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tel: 00 44 1382 562731
Fax: 00 44 1382 562426
Email: est@scri.sari.ac.uk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Development of Barley Transcriptome Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 602)
Hedley,P., Liu,H., Caldwell,D., McCallum,N., Mudie,S.,
Ramsay,L., Machray,G., Marshall,D.F.M. and Waugh,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BQ767421.1 GI:21975895
EST.
                                                                                                                                                                                                                                                                                                                                     Yarrowia lipolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Waugh R, Marshall DF
                                                                                                                                                                                                                                                                                                                                                                                                                                      Yarrowia lipolytica,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAAGTTCTCCACCACTCTGATTGCCTTCGTTGCCGCCGGCCTCGCCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                         of clone AW0AA009A12 of library AW0AA from strain CLIB
ia lipolytica, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:112509"
/clone="EBro08 SQ008 I22"
/tissue_txpe="Toot"
/dev_stage="3 week"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Vector: pSPORT1; Site_1: Sal 1; Site_2: Not 1; Non-normalised library, directionally cloned into pSPORT1. Derived from roots of 3 week old drought stressed barley plants. Developed as part of the barley transcriptome resources of BBSRC/SERAD funded cereal IGF (Investigating Gene Function) project."

251 c 129 g 122 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="root, 3 week, drought-stressed,
EBro08"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/cultivar="Optic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Hordeum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . .602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 32.8; DE Pred. No. 6.1; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scotland,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Resources
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 닺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 602;
                                                                                                                                              Llorente, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :rain CLIB 89 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                           Potier, S.,
                                                   A set
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                   O
Ffi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8787028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 12
                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                L. Submitted (107-SEP-2000) Genoscope - Centre National de Sequencage, 2 rue Gaston Cremieux, CP 5706, 91057 EVRY cedex, FRANCE. (E-mail: seqrefégenoscope.cns.fr) - Web: www.genoscope.cns.fr) This GSS is part of a random genomic sequencing program of thirteen yeast species: Saccharomyces bayanus var. uvarum Saccharomyces servazzil: Zygoasccharomyces rouxii, Saccharomyces servazzil: Zygoasccharomyces rouxii, Saccharomyces Kluyveromyces thermotolerans, Kluyveromyces thermotolerans, Kluyveromyces angusta. Bearyomyces hansenii, var. hansenii, Pitchia sorbitophila, Candida tropicalis and Yarrowia lipolytica. Genomic inserts of 3 to 5 kb were prepared and both extremities were sequenced. See the other extremity of this sequence and for the sequence of the other extremity of this insert.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                559 bp DNA linear GSS 12-OCT-2002
CH230-477F24.TJ CHORI-230 Segment 2 Rattus norvegicus genomic clone
BZ235140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 559)
Zhao, S., Shetty, J., Shatsman, S., Tsegaye, G., Geer, K., Shvartsbeyn, A., Gebregoorgis, E., Overton, L., Russell, D., Chen, D., Riggs, F., de Jong, P. and Fraser, C.M.
Rat BAC End Sequences from Library CHORI-230 MboI segment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:4952"
/clone="AWAAN09A12"
/clone="AWAAN09A12"
/clone="Ib="AWAAN0AA"
/noce="end : T3"
<653. .>969
/noce="similar to Saccharomyces cerevisiae ORF YPL123c [
similarity to ribonuclesses ]
putative frameshift(8)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae,
2 (bases 1 to 994)
Casaregola,S., Neuveglise,C., Lepingle,A., Bon,E., Feynerol,C.,
Artiguenave,F., Wincker,P. and Gaillardin,C.
Genomic exploration of the hemiascomycetous yeasts: 17. Yarrowia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 29; Length 994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGCAGTTCTCTCACGCTCTCATCGCTCGCTCGCCGGCCTCGC 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 29.4; DB 29; Length 9
Pred. No. 65;
0; Mismatches 11; Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Yarrowia lipolytica"
/mol_type="genomic DNA"
/strain="CLIB 89"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    evidence=not_experimental 325 c 210 g 221 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Shaying Zhao
Department of Eukaryotic Genomics
The Institute for Genomic Research
                                                                                                  FEBS Lett. 487 (1), 95-100 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Other_GSS8: CH230-477F24.TV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BZ235140.1 GI:23893919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56.5%;
76.6%;
                                                                                                                                                             (bases 1 to 994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36; Conservative
                                                                                                                                                                                                   Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                  lipolytica
                                                                                                                                                                              Genoscope
                                                                                                                                             11152892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                      PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
BZ235140
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
  REFERENCE
                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                          TITLE
                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

```
9712 Medical Center Dr., Rockville, MD 20850, USA
Tel: 301 838 0200
Fax: 301 838 0200
Email: schao@tigr.org
Clones are derived from the rat BAC library CHORI-230
(http://www.chori.org/bacpac/rat230.htm). For BAC library
availability, please contact Pieter de Jong (pdejong@mail.cho.org).
Clones may be purchased from BACPAC Resources
(http://www.chori.org/bacpac/or ering_information.htm). BAC end
page: http://www.tigr.org/tdb/bac_ends/rat/bac_end_intro.html
Plate: 477 row: F column: 24
Seq primer: Sp6
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Brassica rapa

Bukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids

; eurosids II; Brassicales; Brassicaceae; Brassica.

I (Bases I to 349)

Lim.C.O., Kim.H.Y., Kim.M.G., Lee,S.I., Chung,W.S., Park,S.H.,

Hwang,I. and Cho,M.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L38010 349 bp mRNA linear EST 07-NOV-1996
BNAF0225E Mustard flower buds Brassica rapa cDNA clone F0225, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cell_type="Brain"
/clone_lib="CHOR1-230 Segment 2"
/note="Vector: pTARBAC1.3; Site_1: Mbo1; Site_2: Mbo1;
CHOR1-230 Rat (BN/SSNHed/MCW) BAC library produced by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Expressed sequence tags of Chinese cabbage flower bud cDNA Plant Physiol. 111 (2), 577-588 (1996) 96255495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Lim,C.O., Kim,M.G., Hwang,I. and Cho,M.J. Plant Molecular Biology and Biotechnology Research Center Email: pmbbrc@nongae.gsnu.ac.kr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 27.4; DB 29; Length 559;
Pred. No. 2.3e+02;
0; Mismatches 11; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 CAGTICTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25 CAGCTCTCTCACGTTCTCACATCTCTACCTGCCTCACC 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="caxon:3311"
/clone="F0225"
/clone lib="Mustard flower buds"
/note="Devel stage = flower bud"
110 c 67 g 123 t
                                                                                                                                                                                                                                                                                                                                                                                   1.559
/organism="Rattus norvegicus"
/mol_type="genomic DNA"
/strain="BN/SsNHsd/MCW"
/db_xref="taxon:10116"
/clone="CH230-477F24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            156 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Brassica rapa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="mRNA"
/strain="pekinensis"
                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pieter de Jong"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ch 52.7%;
1 Similarity 75.6%;
34; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L38010
L38010.1 GI:887186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         143 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brassica rapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 34; Conserv
```

```
GI:27548712
 CA766669.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plate: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BZ564779/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                       ORGANISM
                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .1615

/ organism="Homo sapiens"
/ mol_type="mRNA"
/ mol_type="mRNA"
/ mol_type="mRNA"
/ db xref="taxon:966"
/ clone="IMAGE:5211149"
/ tisue_type="leukccyte"
/ tisue_type="leukccyte"
/ lab hogt="DH108"
/ clone=lib="NHH MGC_118"
/ clone=lib="NHH MGC_118"
/ non-activated adult donors. Library is oligo-df primed and directionally cloned (ECCRV Site is destroyed upon cloning). Average insert size 1.7 kb, insert size range 1.2-3.3 kb. Library is normalized and enriched for full-length clones and was constructed by C. Gruber (Invitrogen). Research Genetics tracking code 027. Note: this is a NHH MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA766669

AF53-Rpf 12_F09_T7_035.abl IRRI Drought Stress Panicle Library Oryza sativa (indica cultivar-group) cDNA clone C0004353 5' similar CA766669
                                                                                                                                                                                                         BI519263 1615 bp mRNA linear EST 29-AUG-2001
600062017R1 NIH_MGC_118 Homo sapiens cDNA clone IMAGE:5211149 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                       ö
                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases 1 to 1615)
11H-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs.remail.nih.gov
Tissue Procurement: Life Technologies, Inc.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAMISJO row: a column: 06
High quality sequence stop: 76.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
51.5%; Score 26.8; DB 12; Length 1615;
Best Local Similarity 73.9%; Pred. No. 4e+02;
Matches 34; Conservative 0; Mismatches 12; Indels 0;
 Length 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         932 IGCTGTTCTCTCCCGCGTTCTGCTCGCTGCCGGCGCGTCTC 887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAGTTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGC 47
                                     Indels
                                                                                             7 GITCICLCTCTCTATCTTCTCTCTCGACGATGCCGGCTTC 46
Score 27.2; DB 14;
Pred. No. 2.4e+02;
                                                                           6 GTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTC
                                       ю
Э
                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                   BIS19263
BIS19263.1 GI:15344055
52.3%;
80.0%;
                                                                                                                                                                                                                                                                                                                          Homo sapiens (human)
                                     32; Conservative
                                                                                                                                                                                                                                                     mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                Homo sapiens
 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                             BI519263/c
                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
CA766669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                       Matches
                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                         RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                             ઠે
```

```
Oryza sativa (indica cultivar-group)

Oryza sativa (indica cultivar-group)

Bukaryora, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;

Bukaryora, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;

Ehrhatoideae; Oryzeae; Oryza

I (bases 1 to 559)

Bennett, J., Arumgam, K., Lafitte, R., Wen, J., Rudd, S. and

Bruskiewich, R.M.

IRI Drought Stress Panicle cDNA Library

Unpublished

On Dec 2, 2002 this sequence version replaced gi:25995924.

Contact: Richard Bruskiewich

Blometrics and Bioinformatics Unit

International Rice Research Institute

DAPO 777, Metro Manila, Philippines

Tel: +63-2-845-0563

Fax: +63-2-845-0566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fmail: r.bruskiewichecgiar.org
International Rice Information System (IRIS;
http://www.iris.irri.org): DD0204352
Assignment of putative function to the sequence by S. Rudd of the
Munich Information Center for Protein Sequences (http://mips.gsf.de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="Panicles"
/dev stage="Flowering"
/dev stage="Flowering"
/done_lib="IRRI Drought Stress Panicle Library"
/clone_lib="IRRI Drought Stress Panicle Library"
/note="Vector: pBluescript II SK+; Water stress was applied by not watering for 4 consecutive days. Panicles were collected from control (well watered) and stressed plants at 2 days before heading, at heading, 50% flowering and 4 days after 50% flowering."
153 c 139 g 139 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               850 bp DNA linear GSS 17-DEC-2
pacs2-164_492.s1 pacs2-164 Pseudomonas aeruginosa genomic clone
pacs2-164_492, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peruducing to 850)

1 (bases 1 to 850)
Spencer, D.H., Raymond, C.K., Smith, E.E., Sims, E.E., Hastings, M., Burns, J.L., Kaul, R. and Olsen, M.V.
Whole-Genome-Sequence variation among multiple isolates of Psedomonas aeruginosa library
J. Bacteriol., (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pseudomonas aeruginosa
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .559
/organism="Oryza sativa (indica cultivar-group)"
/mol_type="mRNA"
/cultivar="IR64"
/db.xref="taxon:39946"
/clone="C0004353"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51.2%; Score 26.6; DB 14; 71.4%; Pred. No. 3.9e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         row: F column: 09.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J. Bacteriol., (2002) In
Contact: Chris K. Raymond
Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BZ564779.1 GI:27191277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 71.4*
"...hes 35; Conservative
```

~

ö

```
HS01B22w HS Hordeum vulgare subsp. vulgare cDNA clone HS01B22 3-PRIME, mRNA sequence.
BQ662215.
BQ662215.1 GI:21803348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae
; Triticeae, Hordeum.
    Zhang, H., Potokina, E., Michalek, W., Weschke, W., Stein, N. and Graner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /lone lib="HS"
/clone lib="HS"
/note="Vector: pBluescript SK+; Site_1: EcoRI (5'-end of cDNA); Sute to a cloning artefact caused by the kit, in most cases the EcoRI site is NOT present, as well as the EcoRIadapter used for cloning. To excise the insert, restriction sites upstream EcoRI should be used (e.g. bamHI, SalI,PStI). NOTE: Also due to the cloning system used Blue/white selection for recombinats is not 100% reliable."
                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                 1 AIGCAGITCICICACGCICICATCGCICTCGCTGCCGGCCTCGCCAGIG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Stein Nils
Molecular Markers Group, Department Genbank
Institute of Plant Genetics and Crop Plant Research (IPK)
Corrensstr. 3, 06466, Gatersleben, Germany
Tel: 039482-5595
                                                                                                                                                                                                                       ö
                                                                                                                                                                                Length 1044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="mRNA"
/cultivar="barke"
/cultivar="barke"
/db_xref="taxon:112509"
/clone="HS01B22"
/fissue_type="embryo + scutellum"
/lab_host="XL10-Gold"

    .447
    /organism="Hordeum vulgare"

                                                                                                                                                                                                                       16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                              50.8%; Score 26.4; DB 28; 69.2%; Pred. No. 4.9e+02; ive 0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 26.2; DB 13;
Pred. No. 4.9e+02;
0; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barley ESTs from germinating seeds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: stein@ipk-gatersleben.de
Insert Length: 447 Std Error:
Plate: 1 row: B column: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 447)
                                                                                                                                                                                                                     36; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 72.3
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: T7.
                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished
                                                                                                                         295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93
                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                         BQ662215/c
                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Mahairas GG, Wallace JC, Hood L
High Throughput Sequencing Center
University of Washington
401 Queen Anne Abnington
401 Queen Anne Abnington
401 Queen Anne Abnington
402 Queen Anne Abnington.
403 G16-3887
Email: jwallace@u.washington.edu
Clones are derived from the human BAC library RPCI-11. For BAC
library availablility, please contact Pieter de Jong
(pieter@dejong.med.buffalo.edu). Clones may be purchased from
BACPAC Resources (http://bacpac.med.buffalo.edu/ordering.bac.htm)
or from Resear h Genetics (info@resgen.com). BAC end Web_Server:
Plate: 963 row: J column: 15
                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSS 16-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sepiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1044)
Mahairas,G.G., Wallace,J.C., Smith,K., Swartzell,S., Holzman,T.,
Keller,A., Shaker,R., Furlong,J., Young,J., Zhao,S., Adams,M.D. a.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence-tagged connectors: A sequence approach to mapping and scanning the human genome Proc. Natl. Acad. Sci. U.S.A. 96 (17), 9739-9744 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AQ743420
HS_5387_B1_E08_SP6_RPCI-11 Human Male_BAC_Library Homo sapiens genomic_clone_Plate=963_Col=15_Row=J, genomic_survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                            /db xref="taxon:287"
/clone="pacs2-164_492"
/clone_lib="pacs2-164"
/note="clinical isolate 2-164 Whole genomic shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                 .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25
                                                                                                                                                                                                                                                                                                                                                                           Length 850;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 CAGTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                               Indela

    . 850
    /organism="Pseudomonas aeruginosa"

                                                                                                                                                                                                                                                                                                                                                                                                               14;
                                                                                                                                                                                                                                                                                                                                                                         DB 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
|mol_trype="genomic DNA"
|/mol_trype="genomic DNA"
|/dD_xref="taxon:9606"
|/clone="Plate=963 Col=15 Row=J"
                                                                                                                                                                                                                                                                                                                                                                       Score 26.6; DB 29
Pred. No. 4.1e+02;
0; Mismatches 14
University of Washington Box 352145, Seattle, WA 98105-2145, USA Tel: 2062216954 Fax: 2066857244 Email: craymond@u.washington.edu Class: shotgun.
                                                                                                                                                                                                                                                                                                                163 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence stop: 1044.
Location/Qualifiers
                                                                                                                                                                            /mol_type="genomic DNA"
/strain="2-164"
                                                                                                                                                                                                                                                                                                              221 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AQ743420.1 GI:5520942 GSS.
                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 71.4%;
Matches 35; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /sex≕"male¹
                                                                                                                                                                                                                                                                                                                299 C
                                                                                                                                                                                                                                                                                              library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lass: BAC ends
                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10449764
                                                                                                                                                                                                                                                                                                                167
                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 16
AQ743420/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
```

ô g

```
Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Enkaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae
; Triticeae; Hordeum.
; Triticeae; Hordeum.
1 (bases 1 to 627)
                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Actinopterygii, Neopterygii, Teleostei, Ostariophysi, Cypriniformes
; Cyprinidae, Danio.
1 (bases 1 to 522)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BQ466638 627 bp mRNA linear EST 30-MAY-2002
HS01B22T HS Hordeum vulgare subsp. vulgare cDNA clone HS01B22
                                                                                                                            1 (bases 1 to 522)
Lee, S., Ruan, H., Ma, W., Xu, M., Lo, J., He, Y., Liu, F., Eun, A., Wen, Z.
and Peng, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                        15,000 unique zebrafish EST clusters from two cDNA libraries Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Stein Nils
Molecular Markers Group, Department Genbank
Institute of Plant Genetics and Crop Plant Research (IPK)
Correnstr. 3, 06466, Gatersleben, Germany
Tel: 039482-5522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 26.2; DB 9; Length 522;
Pred. No. 5e+02;
0; Mismatches 13; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Hordeum vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                              Contact: Peng J
Lab of Functional Genomics
Institute of Molecular and Cell Biology
30 Medical Drive, Singapore, 117609, Singapore
Email: pengir@imcb.a-star.edu.sg
Clone requests: pengir@imcb.a-star.edu.sg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or fish"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="embryo + scutellum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.522
| organism="Danio rerio"
| mol type="RRN"
| strain="local wildtype"
| db xref="taxon:7955"
| clone="159-C11-2"
| / cisue type="whole embryo or
| dev_grage="mixed stages"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barley ESTs from germinating seeds Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: stein@ipk-gatersleben.de
Insert Length: 627 Std Error:
Plate: 1 row: B column: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/cultivar="barke"
/db_xref="taxon:112509"
/clone="HS01B22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone lib="PJR-Z1+Z2"
148 c 117 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BQ466638.1 GI:21274420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5-PRIME, mRNA sequence.
BQ466638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 50.4%;
Best Local Similarity 72.3%;
Matches 34; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Seg primer: T3.
   Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                     TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 20
BQ466638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. 456
// Organism="Hordeum vulgare subsp. vulgare"
// mol_type="manA"
// cultivar="barka"
// db_xref="cAb1:44104"
// db_xref="cAb1:44104"
// db_xref="cAb1:44104"
// db_xref="cAb1:44104"
// de_xref="cAb1:44104"
// de_xref="cAb1:44104"
// de_xref="cAb1:4104"
// de_xref="cAb1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; Pooldeae;
'Trilicaeae; Hordeum.
1 (bases 1 to 456)
Zhang, H., Potokina, E., Michalek, W., Weschke, W., Stein, N. and Graner
                                                                                                                                                                                                                  دا 13-456 dp mRNA linear EST 23-APR-2003 HS07A16u HS Hordeum vulgare subsp. vulgare cDNA clone HS07A16 الكامة الك
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           p mRNA linear EST 18-SEP-2002
CDNA clone 159-C11-2, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
Contact: Stein Nils
Contact: Stein Nils
Molecular Markers Group, Department Genbank
Institute of Plant Genetics and Crop Plant Research (IPK)
Corrensstr. 3, 06466, Gatersleben, Germany
Tel: 039482-5595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 50.4%; Score 26.2; DB 14; Length 456; Best Local Similarity 72.3%; Pred. No. 4.9e+02; Matches 34; Conservative 0; Mismatches 13; Indels 0
48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 TGCAGTTCTCTCACGCTCTCATCGCTCGTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: stein@ipk-gatersleben.de
Insert Length: 456 Std Error: 0.00
Plate: 7 row: A column: 16
Seg primer: M13uni.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Barley ESTs from germinating seeds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL925722 AL925722 PJR-Z1+Z2 Danio rerio o
AL925722 AL925722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                     CB883923.1 GI:30085919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AL925722.1 GI:23192302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST.
Danio rerio (zebrafish)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                         CB883923/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 19
AL925722
                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                      RESULT 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
   ઠે
                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
Query Match
Best Local
                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
DEFINITION
                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 23
                                                                                                                     CB680101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BU504141
                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
       ሯ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
/dev_stage="0-16 hours after imbibition"
/lab_host="XL10-Gold"
/lab_host="XL10-Gold"
/clone_lib="HS"
/note="Vector: pBluescript SK+; Site_1: EcoRI (5'-end of cDNA); Site_2: XhoI (3'-end of cDNA); Due to a cloning artefact caused by the kit, in most cases the EcoRI site is NOT present, as well as the EcoRIadapter used for cloning. To excise the insert, restriction sites upstream EcoRI should be used (e.g. BamHI, SalI,PStI). NOTE: Also due to the cloning system used Blue/white selection for recombinate is not 100% realiable."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (02-AUG-2001) Asao Fujiyama, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suchitro-chou, Tsurumi -ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:chimpbes@gsc.riken.go.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)
Clones are derived from the chimpanzee BAC library PTB This BAC end was generated during the R&D process and may have higher chance of
                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSS 01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AG035039 1145 bp DNA linear GSS 01-NOV-200
Pan troglodytes DNA, clone: PTB-010302.F, genomic survey sequence.
AG035039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pan troglodytes (chimpanzee)
Ban troglodytes
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fujiyama,A., Hattori,M., Toyoda,A., Taylor,T.D., Yada,T., Totoki,Y., Watanabe,H. and Sakaki,Y.
Totoki,Y., Watanabe,H. and Sakaki,Y.
Borgenices of Library PTB
Unpublished
(hases 1 to 1145)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fuliyama, A., Hattori, M., Toyoda, A., Taylor, T.D., Yada, T., Totoki, Y., Watanabe, H. and Sakaki, Y.
Direct Submission
                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1145;
                                                                                                                                                                                                                                                                       Score 26.2; DB 13; Length 627;
Pred. No. 5.2e+02;
0; Mismatches 13; Indels 0
                                                                                                                                                                                                                                                                                                                                                                       32 #GCCGTTCTCGTTCGCTCTCGTGGTCGCCGCGCGCGCGCTCTCC 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chimpanzee Male BAC Library"
                                                                                                                                                                                                                                                                                                                                                     48
                                                                                                                                                                                                                                                                                                                                                   2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indelg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 26.2; DB 29;
Pred. No. 5.7e+02;
0; Mismatches 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .1145
/organism="Pan troglodytes"
/mol_type="genomic DNA"
/db xref="taxon:9598"
/clone="PTB-010J02.F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cell_type="lymphoblast"
/clone_lib="PTB Chimpanze
173 c 530 g 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : pKS145
: SacI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AG035039.1 GI:16561912
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequencing: -21M13
                                                                                                                                                                                                                                                                       50.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone tracking errors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : SacI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 75.6%;
Matches 31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /sex="male"
                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity 72.31
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R.Site 1
R.Site 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 21
AG035039/c
                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                       å
```

```
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzae, Oryza.

1 (bases 1 to 885)
Jantasuriyarat, C., Lu, G., Gowda, M., Hatfield, J., Zhou, B., Mazur, E.,
Kudrna, D., Dean, R., Soderlund, C., Wing, R. and Wang, G.
Large-scale identification of ESTs involved in the interaction
                                                                                                                                              CB680101
OSJNEf04G16.f OSJNEf Oryza sativa (japonica cultivar-group) cDNA clone OSJNEf04G16 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="Leaf"
/dew stage="3 week"
/lab_host="DH10B"
/clone_lib="OSINEf"
/note="Vector: pBluescript II KS +; Site_1: EcoRI; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BUS04141 1057 bp mRNA linear EST 12-SEP-2002 AGENCOURT 8968970 NIH_MGC_94 Mus musculus cDNA clone IMAGE:6491918 5', mRNA Sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .885
/organism="Oryza sativa (japonica cultivar-group)"
/mol type="mRNA"
/cultivar="Nipponbare"
/db xref="caxon:39947"
/clone="OsJNEf04G16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arizona Genomics Institute
University of Arizona
Biological Sciences West, 448A, P.O. Box 210088, Tucson,
85721-0088, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 885;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             384 GGCTGGGGGTCTCCTGGCTGCTTCCCCGGCGTCTTGGCCG 425
9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ch 50.0%; Score 26; DB 14; Similarity 76.2%; Pred. No. 6.2e+02; 32; Conservative 0; Mismatches 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: gta aaa cga cgg cca gtg
BACKWARD: gga aac agc tat gac cat g
Plate: 04 row: G column: 16
Seg primer: gta aaa cga cgg cca gtg.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        between rice and Magnaporthe grisea
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: http://genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          249 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  XhoI; Uninfected
                                                                                                                                                                                                                                                     CB680101.1 GI:29683826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:22810374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     370 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Rod Wing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 520 626 3967
Fax: 520 621 9288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BUS04141.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
```

```
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 25
BZ547247/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                 L Unpublished
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: The Cepko Laboratory
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM14044 row: b column: 15
High quality sequence stop: 397.
Incation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maize genomic sequences found using engineered RescueMu transposon
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD clade, Panicoideae, Andropogoneae, Zea.
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I basea 1 to 1057)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BH222532
1006107G12.x1 1006 - RescueMu Grid G Zea mays genomic, genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 recadification contraction of the state of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50.0%; Score 26; DB 13; Length 1057; 70.0%; Pred. No. 6.40+02; tive 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Zea mays"
/mol_type="genomic DNA"
/cultivar="mixed background W23/A188/B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Department of Biological Sciences Stanford University B55 California Ave, Palo Alto, CA 94304, USA Tel: 650 723 2227
Fax: 650 725 8221
Email: walbocderanford.edu Plate: transposon-tagged.
Class: transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BH222532.1 GI:16817477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 353)
Walbot, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 70.0
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Walbot V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             survey sequence.
8H222532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2еа шаув
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BH222532/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                 REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
/clone_lib="1006 - RescueMu Grid G"
/rote="Organ: leaf; Vector: RescueMu (engineered from pBlueScript backbone); Site_l: BamHI; Site_2: BglII; RescueMu is a 4.9 kb, modified maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription units. For more information on RescueMu, go to the web site 'www.zmdb.iastate.edu' and follow the links for 'RescueMu.' Grid G was grown at Stanford in 2000. DNA was extracted from leaf punches, double digested using BamHI and BglII, and ligated to form circular plasmids. DH10B cells were transformed and then screened on LB plates with ampioilin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BZ547247

OGAKP2TM ZM2_0.7_1.5 KB Zea mays genomic clone ZMMBMa0082D20,
genomic survey sequence.
BZ547247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta; Liliopsida, Poales, Poaceae, PACCAD Calde, Panicoideae, Andropogoneae, Zea.

1 (bases 1 to 803)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Resnick, R.W., Rudiman, M.A., Badama, M.A., Bedell, J.A., Roblfing, T., Citek, R.W., Numberg, A., Robbins, D. and Lakey, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:4577"
/clone="ZnMBMa0082D20"
/clone lib="ZMC 0.7 1.5 KB"
/note="Vector: pBCSK-; Site_1: HincII; 0.7-1.5 kb
methylation filtered genomic DNA library"
231 c 283 g 124 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49.6%; Score 25.8; DB 28; Length 353; 81.1%; Pred. No. 6.2e+02; ive 0; Mismatches 7; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match

49.6%; Score 25.8; DB 29; Length 803;
Best Local Similarity 81.1%; Pred. No. 7e+02;
Matches 30; Conservative 0; Mismatches 7; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9712 Medical Center Drive, Rockville, MD 20850, USA Fel: 301-838-5843 Fax: 301-838-0208 Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75 CGCTCGCGCTCTCGCTCGCCGCGCTCCCGGCCTC 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 CTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTC 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                            34 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Zea mays"
/mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq primer: TR
Class: sheared ends.
Location/Qualifiers
/tissue_type="leaf"
/dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                         171 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                283 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BZ547247.1 GI:27102745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Other GSSs: OGAKP22TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            92
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .803
```

ò å

```
/db xref="taxon:5514"
/clone="g3d05fs"
/clone_lib="Fusarium sporotrichioides Tri 10 overexpressed
                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Vector: pBlueScript SK-; Site 1: EcoRI; Site 2: XhoI; S' end of cDNA cloned into EcoRI site of pBluescript; 3' end of cDNA cloned into XhoI site of pBluescript" 48 c. 17 g. 27 t.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BU667306 478 bp mRNA linear EST 30-SEP-2002 U002E04 Oryza sativa mature leaf library induced by M.grisea Oryza sativa cDNA clone U002E04, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Erhartoideae; Oryzeae; Oryzea.

1. (base; Lo 478)

Dong, H.T., Li, D.B., Zhuang, X.F., Dai, C.G., Sun, L.X., Pei, Y.X., Wu, H.F., Jainag, Y.X., Yu, F.C., Gao, O.K. and Lou, Y.C.

A Gene Expression Screen in Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="leaf"
/dev stage="Mature stage"
/clone_lib="Oryza sativa mature leaf library induced by
M.grisea"
         Contact: Bruce A. Roe, University of Oklahoma, broegou.edu
Department of Chemistry and Biochemistry
Advanced Center for Genome Technology, University of Oklahoma
Advanced Center for Genome Technology, University of Oklahoma
Advanced Center for Genome Technology, University of Oklahoma
102. Parrington Oval, Norman, OK 73019, USA
103. T762
Email: broegou.edu
Contact Dr. Marian Beremand regarding clone availability
Seq primer: T3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          th 49.2%; Score 25.6; DB 12; Length 123; Similarity 70.8%; Pred. No. 6.1e+02; 34; Conservative 0; Mismatches 14; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48 ATGAAGTTCTCGGTGCTCTTTCACTCTCATCGCCGCCACGGCGTC 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Dong HT
Laboratory of Functional Genetics
Bio-technology Institute of Zhejiang University
Kaixuan Road 268#, Hangzhou, Zhejiang, P.R.China
Tel: 0086-571-86892051
                                                                                                                                                                                                                                                                                    /organism="Fusarium sporotrichioides"
/mol_type="mRNA"
/strain="Tri 10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Oryza sativa"
/mol_type="mRNA"
/db_xref="taxon:4530"
/clone="U002E04"
                                                                                                                                                                                                                      High quality sequence stop: 114.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="Vector: pSport2"
128 c 146 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: htdong@zjuem.zju.edu.cn
Seg primer: M13 forward primer.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BU667306.1 GI:23380861
                                                                                                                                                                                                                                                                                                                                                                                                                   CDNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fax: 0086-571-86961525
                                                                                                                                                                                                                                                               1, .123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oryza sativa
Oryza sativa
  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BU667306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 28
BU667306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KFYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SJURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                        GGAKP22TC ZM2_0.7_1.5_KB Zea mays genomic clone ZMMBMa0082D20,
Genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BI189998 110-JUL-2001 93405fs.rl Fusarium sporotrichioides Tri 10 overexpressed cDNA library Fusarium sporotrichioides cDNA clone 93405fs 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Hypocreomycetidae; Hypocreales; mitosporic Hypocreales; Fusarium. 1 (bases i to 123) Fen.O., Tag.A., Peplow,A., Lai,H., Kupfer,C., Peterson,A., Beremand,M. and Roe,B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                          Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.

1 (bases 1 to 873)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T., Citek, R.W., Nunberg, A., Robbins, D. and Lakey, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol type="genomic DNA"
/strain="B73"
/db_xref="taxon:4577"
/clone="zkMBMa0082D20"
/clone="ZMBMa0082D20"
/clone="ZMD20.7 1.5 KB"
/note="Vector: pBCSK-; Site_1: HincII; 0.7-1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ouery Match 49.6%; Score 25.8; DB 29; Length 873; Best Local Similarity 81.1%; Pred. No. 7.1e+02; Matches 30; Conservative 0; Mismatches 7; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9712 Medical Center Drive, Rockville, MD 20850,
                                           590 CGCTCGCGCTCTCCTCGCTCGCCGCGTCCCGGCCTC 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             609 CGCTCGCGCTCTCGCTCGCCGCGCTCCCGGCCTC 645
                    9 CTCTCACGCTCTCATCGCTCTCGCCGCCTC 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 crcrcacecrcrcarescrcrcerecesecere 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="2ea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fusarium sporotrichioides
Fusarium sporotrichioides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 301-838-5843
Fax: 301-838-0208
Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence.
BI189998
BI189998.1 GI:14663677
                                                                                                                                                                                                                                                        BZ547241.1 GI:27102730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Other_GSSB: OGAKP22TM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: TF
Class: sheared ends.
                                                                                                                                                                                                                                                                                                        Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGR
                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
COMMENT
                                                                                                                             RESULT 26
BZS47241
                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2.
BI189998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
```

g

us-10-081-935-1.rst

02-JUN-2000

EST

linear

```
1...630
/organism="Homo sapiens"
/mol.type="MRNA"
/db_xrefe"taxon:9606"
/dev_stage="Adult"
/clone_lib="HN0006"
/note="Organ: head_normal; Vector: pucl8; Site_1: Smal;
/note="Organ: head_normal; Vector: pucl8; Site_1: Smal;
Site_2: Smal; A mini-library was made by cloning products
derived from ORESTES PCR (U.S. Letters Patent application
No. 196,716 - Ludwig Institute for Cancer Research)
profiles into the pUC 18 vector. Reverse transcription of
tissue mRNA and cubMA amplification were performed under
low stringency conditions."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OSUNECIJHO4.f OSJNEC Oryza sativa (japonica cultivar-group) cDNA clone OSJNEcijh04.5', mRNA sequence. CE657824 GI:29661549 EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=&t2=RC0-HN0006-160 300-011-h09&t3=2000-03-16&t4=1)
Seq primer: puc. 18 forward
High quality sequence start: 5
High quality sequence stop: 478.
Location/Qualifiers
                                                                                                                                                                                                            Bukaryotra; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

1 (bases I to 630)

1 bases I to 630)

1 bases I. of 630;

1 control of the control of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
   630 bp mRNA linear EST 02-JUN-200
RCO-HN0006-160300-011-h09 HN0006 Homo sapiens CDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49.2%; Score 25.6; DB 10; Length 630; 70.8%; Pred. No. 7.7e+02; tive 0; Mismatches 14; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         234 CACTITGCTCACCCGGTCGATCCCGTCCCTGGCCGCCTCGCCCGT 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 CAGTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGT
                                                                                            AW984083.1 GI:8175681
                                                                                                                                                       Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence tags
                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10737800
                                                              AW984083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CB657824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / Organisms—Zea mays.
/ Modi types="genomic DNA"
/ Cultivar="mixed background W23/A188/B73"
/ Lissue type="laad"
/ Lissue transposon
/ Lissue to allow plasmid rescue from total genomic DNA.
Mu elements insert preferentially into transposon
designed to allow plasmid rescue from total genomic DNA.
Mu elements insert preferentially into transcription
units. For more information on Rescuewu, go to the
site 'www.zmdb.iastate.edu' and follow the links for
'Rescuewu. Grid H was grown at Berkeley in 2001. DNA
was extracted from leaf punches, double digested using
BamHI and BglII, and ligated to form circular plasmids.
DHIOS cells were transformed and then screened on LB
plates with ampicillin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                               GSS 12-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Maize genomic sequences found using engineered RescueMu transposon
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD
clade, Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                  BH411461
1007022G03.x2 1007 - RescueMu Grid H Zea mays genomic, genomic
survey sequence.
                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 28; Length 548;
                                                           Length 478;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 TGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14; Indels
                                                                                                                             Indela
                                                                                                                                                                                                                      226 CGCTCATGCTCTCATGCCGCTCGTCGCCGCCGCCGCCGCC 265
                                                                                                                                                                                     48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Walbot V
Department of Biological Sciences
Stanford University
855 California Ave, Palo Alto, CA 94304, USA
Fax: 650 723 2221
                                                                                                                                                                                        9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC
                                                              DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49.2%; Score 25.6; DB 28.70.8%; Pred. No. 7.6e+02; Atrive 0; Mismatches 14.
                                                           Score 25.6; DB 13
Pred. No. 7.4e+02;
0; Mismatches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .548
/organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Class: transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: walbot@stanford.edu
Plate: 1007022 column: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BH411461.1 GI:17582978
                                                              49.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 548)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 34; Conservative
                                                                                                                             31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Walbot, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100
                                                                  Query Match
                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 30
AW984083/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                             RESULT 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                              BH411461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
   ORIGIN
                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

ö

Gaps

ö

21

Gaps

ö

```
/mol_type="mRNA"
/db xref="taxon:8022"
/clone="HT78019 B B10"
/tissue type="pooled"
/lab_host="DH10B"
/clone lib="NOCCWA IRT"
/note="Voctor: pCMV SPORT6; Site 1: Not1; Site 2: Sal1;
Library made from pooled tissue from brain, gill, liver, spleen, muscle, and kidney."
a 166 c 131 g 172 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 48.8%; Score 25.4; DB 14; Length 601; 1 Similarity 68.6%; Pred. No. 8.8e+02; 35; Conservative 0; Mismatches 16; Indels 0.
                                                                                   organism="Oncorhynchus mykiss"
                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                              132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 33
CA642822/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601 bp mRNA linear EST 05-NOV-2002 mRNA sequence.
                                                                                                          Zhou, B., Mazur, E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Actinopterygii, Neopterygii, Teleostei, Euteleostei, Protacanthopterygii, Salmoniformes, Salmonidae, Oncorhynchus.

1 (bases 1 to 601)

Rexroad, C.E. and Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USDA, ARS, National Center for Cool and Cold Water Aquaculture USDA, ARS, National Center for Cool and Cold Water Aquaculture 11876 Leetown Road, Kearneysville, WV 25430, USA Tel: 304 724 8340 x2129 Fax: 304 725 0351 Email: crexroad@ncccwa.ars.usda.gov Single pass sequencing. Bases called with phred v0.020425.c and trimmed with the aid of the trim_alt option. Vector identified by Seq primer: AGCGGATAACAATTCACACAGGA.
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Oryza.

1 (bases 1 to 773)

Jantasuriyarat, C., Lu,G., Gowda,M., Hatfield,J., Zhou,B., Mazux Kudrna,D., Dean,R., Soderlund,C., Wing,R. and Wang,G. Large-scale identification of ESTs involved in the interaction between rice and Magnaporthe grisea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence analysis of a rainbow trout normalized cDNA library Unpublished
                                                                                                                                                                                                                       Unpublished
Contact: Rod Wing
Arizonaics Institute
Biological Sciences West, 448A, P.O. Box 210088, Tucson, AZ
85721-0088, USA
Far: 520 625 3967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FORWARD: gta aaa cga cgg cca gtg
BACKWARD: gga aac agc tat gac cat g
Plate: 13 row: H column: 04
Seq primer: gta aaa cga ccg cca gtg.
Location/Qualifiers
1 roys
| normal man = 0ryza sativa (japonica cultivar-group) | normal type="mRNA" | no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14; Length 773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 49.2%; Score 25.6; DB 1
1 Similarity 77.5%; Pred. No. 8e+02;
31; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oncorhynchus mykiss (rainbow trout)
Oncorhynchus mykiss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: http://genome.arizona.edu
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA354617.1 GI:24599804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Rexroad CE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 32
CA354617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                         REFERENCE
                                                                                                      AUTHORS
                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                TITLE
```

ઠે g

```
Triticum aestivum (bread wheat)
Triticum aestivum
Triticum aestivum
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Bukaryota, Magnoliophyta; Liliopsida, Poales, Poaceae, Pooideae,
Triticeae, Triticum.
Triticeae, Triticum.
Tringey,S.V., Powell,W., Wolters,P., Dolan,M., Hainey,C., Yuan,Z.,
Miao,G., Caraher,N. and Hanafey,M.K.
DuPont Wheat CDNA Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol Lygensman All Colore Man Arguments of the Arge and Arguments of the Arguments of Arguments of the Argum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Crop Genetics
E. I. DuPont de Nemours and Company
1 Innovation Way, P.O. Box 6104, Newark, DE 19714-6104, USA
1-13 302-631-2602
Fax: 302-631-2607
Email: Scott.V.Tingey@USA.dupont.com
Seq primer: M13.
                                                                             266 TGCTTTGCTCTCACACTCTTCTCTCAGGGGGGCCATGACTGT 316
2 recharrererence receptor respective consequence services services and services receptor services reconstructions and services reconstructions are serviced reconstructions and services reconstructions are serviced reconstructions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CA642822 402 bp mRNA linear wrein.pk0061.bl2 wrein.pk0061.bl2 s' end, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match

48.5%; Score 25.2; DB 14;
Best Local Similarity 75.0%; Pred. No. 9.5e+02;
Matches 30; Conservative 0; Mismatches 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Triticum aestivum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CA642822.1 GI:25221118
```

0

us-10-081-935-1.rst

```
Ebwaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticaeae, Triticaeae, Triticaeae, Triticaeae, Triticaeae, Tringey, S.V., Powell, W., Wolters, P., Dolan, M., Hainey, C., Yuan, Z., Miao, G., Caraher, N. and Hanafey, M.K.
Unpublished
                                                                           /organism="Oryza sativa (japonica cultivar-group)"
/mol type="mRNA"
/cultivar="Nipponbare"
/db_xref="taxon:3994"
/clone="11517_2A"
/clone="Tibe panicle at flowering stage"
/clone lib="Rice panicle at flowering stage"
/note="Organ: panicle; Rice cDNA from panicle at flowering
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        359 bp mRNA linear EST 26-NOV-2002 wds3f.pk001.fl5 wds3f Triticum aestivum cDNA clone wds3f.pk001.fl5 cA724779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        // .359
/organism="Triticum aestivum"
/mol_type="mRNA"
/mol_type="mRNA"
/db xref="taxon:4565"
/clone="wds3f.pk001.f15"
/lasue type="seedling"
/labue type="bull pg"
/clone lib="wds3f"
/note="Vector: pBluescript SK+; Site_1: EcoRI; Site_2:
/xhoi; wheat 10 day old seedling full length without
  Email: tsasaki@abr.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/
PROJECT ='RGP'.
                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DE 19714-6104, USA
                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                               62 ATGCAGCGGCTCTCGCCGTCGTCGCCCTCCTCGCCGCCGCAGCCGCCA 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80 ATGCGTTTCTCCACCATTGCCACCGCTGTCATCGCCCCGGGGGTTGCCA 128
                                                                                                                                                                                                                                                                                                                                                                                                        49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ATGCAGTTCTCTCACGCTCTCATCGCTCGCTGCCGGCCTCGCCA 49
                                                                                                                                                                                                                                                                                                                         ch 48.1%; Score 25; DB 14; Length 281; 1 Similarity 69.4%; Pred. No. 1e+03; 34; Conservative 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 359;
                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                  3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 25; DB 14; Length 35:
Pred. No. 1.1e+03;
0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Scott V. Tingey
Crop Genetics
E. I. DuPont de Nemours and Company
1 Innovation Way, P.O. Box 6104, Newark, DE
Tel: 302-631-2607
Fax: 302-631-2607
Fax: 302-631-2607
Fax: Scott.V.Tingey@USA.dupont.com
Seq primer: M13.
                                                                                                                                                                                                                                                                39 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Triticum aestivum (bread wheat)
Triticum aestivum
                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                6 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA724779.1 GI:25446575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ch
1 Similarity 69.4%;
34; Conservative
                                                                                                                                                                                                                                                                98 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  biotin"
                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ಥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 36
CA724779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae; Pooideae; Triticeae; Triticum.

1 (basea I to 521)

1 (basea I to 522)

Miao, G., Caraher, N. and Hanafey, M.K.
Dupont Wheat cDNA Sequence
Unpublished
Contact: Scott V. Tingey
Crop Genetics
                     CA/12672 S22 bp mRNA linear EST 26-NOV-2002 wdk3c.pk006.116 wdk3c Triticum aestivum cDNA clone wdk3c.pk006.116
57 and, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzae; Oryza,
1 (bases 1 to 281)
Sasaki,T. and Yamamoto,K.
Whoublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pBluescript SK+; Site 1: EcoR1; Site 2:
XhoI; Wheat (Triticum aestivum L.) developing kernel, 14
days after anthesis."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Takuji Sasaki
National Institute of Agrobiological Resources
Rice Genome Research Program, Kannondai 2-1-2, Tsukuba, Ibaraki
305-8602, Japan
Tel: 81-298-38-7441
Fax: 81-298-38-7468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                        E. I. DuPont de Nemours and Company
1 Innovation Way, P.O. Box 6104, Newark, DE 19714-6104, USA
Tel: 302-631-2602
Fax: 302-631-2607
Email: Scott.V.Tingey@USA.dupont.com
Seq primer: M13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 GCAGTICTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match

88.5%; Score 25.2; DB 14; Length
Best Local Similarity 71.7%; Pred. No. 9.8e+02;
Matches 33; Conservative 0; Mismatches 13; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / Coganism="Triticum aestivum"
/ Aorganism="Triticum aestivum"
/ Ab_xref="taxon:4565"
/ Clone="wdk30:pk006.ll6"
/ Lissue_type="kernel"
/ lab_hoge="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80 L
                                                                                                                                                           Triticum aestivum (bread wheat)
Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       138 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="wdk3c"
                                                                                                CA712672
CA712672.1 GI:25434465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C72378.1 GI:2427915
EST.
                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 35
C72378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
RESULT 34
CA712672
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
```

```
Sandford Street, London, Ontario, Canada NSV 4T3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Hordeum vulgare subsp. vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1391 Sandford Street, Lon
Tel: 519 457 1470
Fax: 519 457 3997
Email: gijzenm@em.agr.ca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BM370328.2 GI:21951439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BM370328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BM370328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                    Gossypium arboreum
Gossypium arboreum
Gossypium arboreum
Eukaryota; Viridipantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Wisidipantae; Streptophyta; Embryophyta; Tracheophyta;
jeurosids II; Malvales; Malvaceae; Malvoideae; Gossypium.
I (Bases II to 449)
Wing, R.A., Frisch, D., Yu, Y., Main, D., Rambo, T., Simmons, J., Henry, D., Wood, T.C., Leslie, A. and Wilkins, T.A.
An integrated analysis of the genetics, development, and evolution of the cotton fiber
                                                                        AW730728
GA Ea0027103 Gossypium arboreum 7-10 dpa fiber library Gossypium arboreum arboreum cDNA clone GA Ea0027103, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 16-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 569)
Qutob, D., Hraber, P.T., Sobral, B.W.S. and Gijzen, M.
Comparative analysis of expressed sequences in Phytophthora sojae
Plant Physiol. 123 (1), 243-254 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cultivar="8400"
/db_xref="taxon:29729"
/clone="GA_E20027103"
/tissue_type="Fibers isolated from bolls harvested 7-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /lab host="E. coli"
/clone_lib="Gossypium arboreum 7-10 dpa fiber library"
/note="Vector: pBK-CMV; Site_l: EcoRI; Site_2: Xhol"
78 c 184 g 72 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; stramenopiles; Oomycetes; Pythiales; Pythiaceae;
Phytophthora.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BES81376 569 bp mRNA linear EST 1
11-9B-MY PsojaeMY Phytophthora sojae cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 48.1%; Score 25; DB 9; Length 449; l Similarity 75.6%; Pred. No. 1.1e+03; 31; Conservative 0; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262 TrcGGTrcGCACGCTCTCATCGCTGTTCTCGCTCCCGGC 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGC 42
                                                                                                                                                                                                                                                                                                                                                                                                                         Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. 449
/organa="Gossypium arboreum"
/mol_type="mRNA"
/erfin="AKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Gijzen M
Agriculture and Agri-Food Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 449.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: rwing@clemson.edu
                                                                                                                                                    AW730728.1 GI:7628277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BES83376.1 GI:9834325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Phytophthora sojae
Phytophthora sojae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: 864 656 7288
Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Wing RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                    AW730728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                115
                                                                                                                                                                          EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                  RESULT 37
AW730728/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                            ORGANISM
                                                                                                                                ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 38
BE583376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

```
// for the form of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hordeum vulgare subsp. vulgare
Eukaryorate, Viridiplantee; Streptophyta; Embryophyta; Tracheophyta;
Bukaryorat; Viridiplantee; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Hordeum.

I (bases 1 to 591)
Strengtophyta; Liu,H., Caldwell,D., McCallum,N., Mudie,S., Cardle,L.,
Ramsay,L., Machray,G., Marshall,D.F.M. and Waugh,R.
Development of Barley Transcriptome Resources
On Jan 10, 2002 this sequence version replaced gi:18113718.
Contact: Waugh R, Marshall DF
Genome Dynamics/Computational Biology
Scottish Crop Research Institute
Truccarrie Paragone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM370328 591 bp mRNA linear EST 23-JUL-2002 EBro08_SQ003_N19_R root, 3 week, drought-stressed, cv Optic, EBro08 Hordeum vulgare subsp. vulgare cDNA clone EBro08_SQ003_N19 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 48.1%; Score 25; DB 10; Length 569; l Similarity 69.4%; Pred. No. 1.1e+03; 34; Conservative 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Invergowrie, Dundee, DD2 5DA, Scotland, UK
Tel: 00 44 1382 562731
Fax: 00 44 1382 562426
Email: est@scr..sari.ac.uk
Seq primer: M13 reverse
Location/Qualifiers
1. .569
/organism="Phytophthora sojae"
```

```
Search completed: November 13, 2003, 08:51:58 Job time : 1949 secs
                                                                                                                                                                          ò
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oryza sativa (japonica cultivar-group)

SM Oryza sativa (japonica cultivar-group)

Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;

Enthartoideae; Oryzeae; Oryza;

Enthartoideae; Oryzeae; Oryza;

I (base 1 to 688)

Jantaauriyarat, C., Lu.G., Gowda, M., Hatfield, J., Zhou, B., Mazur, E., Kudrna, D., Dean, R., Soderlund, C., Wing, R. and Wang, G.

Large-scale identification of ESTs involved in the interaction between rice and Magnaporthe grisea

Unpublished

Contact: Rod Wing

Arizona Genomics Institute

University of Arizona

Biological Sciences West, 448A, P.O. Box 210088, Tucson, AZ
                                                                                                                                                                                                                  /note="Vector: pSPORT1; Site_1: Sal 1; Site_2: Not 1; Non-normalised library, directionally cloned into pSPORT1. Derived from roots of 3 week old drought stressed barley plants. Developed as part of the barley transcriptome resources of BBSRC/SEBRAD funded cereal IGF (Investigating Gene Function) 121 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CB649291 688 bp mRNA linear EST 08-APR-2003 OSJNED13C08.f OSJNED Oryza sativa (japonica cultivar-group) cDNA clone OSJNED13C08 5', mRNA sequence. CB649291. GI:29644284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Vector: pBluescript II KS +, Site 1: EcoRI; Site 2: XhoI; 24 hrs after innoculation with Rice Blast (Che 86061
                                                                                                                                                                       /clone lib="root, 3 week, drought-stressed, cv Optic,
EBro08"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94 ATGCAGTTCGCCGACGCCGTCTTGCCCTCGCCGCTGGCGTTCGCCA 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      49
                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 48.1%; Score 25; DB 12; Length 591; 1 Similarity 69.4%; Pred. No. 1.1e+03; 34; Conservative 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FORWARD: gta aaa cga cgg cca gtg
BACKWARD: gga aac agc tat gac cat g
Plate: 13 row: C column: 08
Seq primer: gta aaa cga cgg cca gtg.
Location/Qualifiers
/mol_type="mRNA"
/cultivar="Optic"
/db_xref="taxon:112509"
/clone="EBroo8_S0003_N19"
/tissue_type="root"
/dev stage="3 week"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="Leaf"
/dev_stage="3 week"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'clone_lib="OSJNEb"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85721-0088, USA
Tel: 520 626 3967
Fax: 520 621 9288
Email: http://genom
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                   114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 40
CB649291
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
Gaps
                                               .
0
                                                                 Length 688;
                           Score 25; DB 14; Length 68
Pred. No. 1.2e+03;
0; Mismatches 15; Indels
 105
 221 g
                            Query Match
Best Local Similarity 69.4%;
Matches 34; Conservative
 U
 264
 98 a
BASE COUNT
ORIGIN
```

```
Coccidioides posadasii
Coccidioides posadasii
Eukaryota; Fungi; Ascomycota: Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 1201)
Dugger, K.O., Villareal, K.M., Ngyuen, A., Zimmermann, C.R., Law, J.H. and Galgiani, J.N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U39835.1 GI:1161373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                               November 13, 2003, 01:09:54 ; Search time 1945 Seconds (without alignments) 1093.728 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 atgcagttctctcacgctct......cgctgccggcctcgccagtg 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5777422
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2888711 seqs, 20454813386 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_pat:
em_ph:
em_ph:
em_ro:
e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_sy:*
em_htgo_hum:*
em_htgo_mus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                       US-10-081-935-1
52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1: 90 ba: *
2: 90 ba: *
3: 90 ba: *
5: 90 ba: *
6: 90 bat: *
7: 90 bat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_om:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                           Run on:
```

Pred. No. is the number of results predicted by chance to have a

| C C C C C C C C C C C C C C C C C C C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Match<br>100.0 |          |              |                        |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|--------------|------------------------|----------------|
| NOO.  SCOOL STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Match<br>100.0 |          |              |                        |                |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 88888          | Leng     | B :          | ID                     |                |
| 100 8 8 7 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0000           | 1201     | 80           | CIU39835               | 39835          |
| 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 983            | 53       | <b>c</b> o ( | CIU32518               |                |
| 2222222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 3 5      | pα           | CIUS1200<br>AF013256   | Coccidiosa     |
| 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 9705     | 0            | AC105307               | 9              |
| 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ~              | 906      | 7            | AC120087               | 8              |
| 8 26 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ď              | 5325     | 7            | AC126527               | Ŋ              |
| 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ä              | 5593     | 7            | AC091017               | Ξ              |
| 110 26 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ä              | 30       | ۵۵           | AC098566               | 9              |
| 200 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                | 9090     | ω (          | AE017063               | 9              |
| 11111111111111111111111111111111111111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 358      | <b>x</b> c   | AF092435               | m s            |
| 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4. 4           | ט ה      | ٦ ,          | AF004 / 6 y            | 9 0            |
| 20022222222222222222222222222222222222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 2522     | <b>4</b> ~   | ACI40331<br>LETSEDTHDE | າ .            |
| 1114 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 9 6            | 1784     | , c          |                        | ٠              |
| 117<br>128<br>130<br>131<br>140<br>150<br>160<br>170<br>170<br>170<br>170<br>170<br>170<br>170<br>17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                | 80       | ۰ ۵          | AP005635               | 35 Orvza       |
| 118<br>22<br>22<br>23<br>23<br>23<br>24<br>33<br>33<br>33<br>34<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40<br>40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0              | 6220     | ~            | AP005637               | 37 Orvza       |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ö              | 7166     | 2            | AC084081               | 81 Homo s      |
| 200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200<br>200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ö              | 8733     | ~            | AP005427               | 27 Oryza       |
| 221 22 23 23 24 33 24 33 25 25 25 25 25 25 25 25 25 25 25 25 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ö              | 1129     | 6            | AC107959               | 159 Homo s     |
| 222 222 222 223 233 234 235 235 235 235 235 235 235 235 235 235                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 49.2           | 909      | 4            | OCU18102               | Oryctola       |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | σ,             | 095      | ٦.           | AE008035               | 35 Agroba      |
| 22222222222222222222222222222222222222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | o              | 176      |              | AE009069               | 69 Agroba      |
| 22222222222222222222222222222222222222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ກ່ວ            | 7        | <b>.</b>     | AP005454               | 54 Oryza       |
| 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 4 6      | ٦ ,          | AP003513               | 113 Oryza      |
| 22222222222222222222222222222222222222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | 7 7 7    | <b>7</b> C   | AF003569               | oby Oryza      |
| 2009<br>400<br>400<br>400<br>400<br>400<br>400<br>400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | · a            | 550      | ۰,           | AC130601               | 01 Oryza       |
| 330 255.<br>331 255.<br>334 255.<br>336 255.<br>40 255.<br>41 255.<br>40 255.<br>41 255.<br>41 255.<br>41 255.<br>42 255.<br>43 456.<br>44 556.<br>456.<br>466.<br>47 456.<br>47 456.<br>48 48 46.<br>48 466.<br>48 466.<br>48 466.<br>48 466.<br>48 466.<br>48 466.<br>48 |                | 407      | . ~          | AC099041               | 141 Orvza      |
| 31 25.<br>33 25.<br>34 25.<br>35 25.<br>37 25.<br>37 25.<br>40 25 25.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 235      | N            | CNSOBC87               | 58 Orvza       |
| 32 25.<br>33 25.<br>34 25.<br>36 25.<br>37 62 25.<br>40 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                | 986      | ~            | CNSOBCAF               | 102 Oryza      |
| 33<br>34<br>35<br>36<br>37<br>20<br>37<br>20<br>20<br>20<br>41<br>41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | œ.             | 220      | ٦            | SC0939129              | 29 Strept      |
| 334<br>336<br>337<br>337<br>23<br>338<br>338<br>440<br>410<br>22<br>22<br>23<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ω.             | 003      | -            | AE005738               | 38 Caulobac    |
| 35<br>36<br>37<br>38<br>40<br>40<br>22<br>22<br>22<br>22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | œ ·            | 198      | 8            | AP003047               | 147 Oryz       |
| 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | m              | 100      | · •          | TBBCHR1A2              | 04 Trypanos    |
| 3.<br>3.8<br>4.0<br>4.1<br>2.2<br>2.2<br>2.2<br>2.2<br>2.2<br>3.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                | 72       | н,           | PSU96179               | Pse            |
| 33<br>39<br>41<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | x              | מ פ      | ٠,           | AF232003               | 03 Pseudom     |
| 41041                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | 56       | ٠ .          | AF461561               | 61 Pseudom     |
| 41 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | o c            | 7 6      | ٠.           | ARFWCB                 | m.kandler      |
| :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | •              | 2 2 2    | ٦.           | AE010324<br>AF005119   | <u>y</u> -     |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                | 462      | . –          | AEOO488                | BB Deend       |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8              | 0123     | ~            | AC026810               | 026810 Homo    |
| 4 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8              | 1435     | 80           | OSJN00227              | 1,731580 Orvza |
| 45 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8              | 96       | 6            | AC016651               | 51 Homo        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |          |              |                        |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |          |              | ALIGNMENTS             |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |          |              |                        |                |
| RESULT 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |          |              |                        |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 39835          |          |              | 1201 bp mRNA           | line           |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | te i           |          | 973          | >                      | procein        |
| ACCESSION U39839                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | .0.4           | GT .1161 | 173          |                        |                |

```
/product="antigen 2"
/protein_id="AAB18148.1"
/db_xref="col:12001848.1"
/db_xref="col:120018480"
/translation="MOFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
DFKCHCSKPELDGQTIPCVEEACPLDARISVSNIVVDQCSKAGVPIDIPPVDTTAAPE
PSETAEPTAEPTEEPTAEPTAEPTAEPTAEPTEEPTAVPTGTGGGVPTGTGSFTVTGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            db xref="caxon:199306"
join(175. .255,334. .472,575. .939)
foodon_start=1
/product="antigen 2"
/protein id="AAC49612.1"
/db xref="c1:1556444"
/translation="MQFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLT
PSETABPTABPTABPTABPTABPTABPTABPTABPTABPTBPPEBPTAVPTGTGGGVPTGTGSFTVTGP
PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CIU51200 1435 bp DNA linear PLN 14-JAN-1997
Coccidioides immitis antigen 2 protein gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 1435)
Library Y., Yang, C., Magee, D.M. and Cox, R.A..
Direct Submission
Submitted (12-MAR-1996) Rebecca A. Cox, Clinical Investigation,
Texas Center for Infectious Disease, 2303 S.E. Millitary Dr., San
Antonio, TX 7823, USA
Location/Qualifiers
                             /note="major T-cell-reactive component of mycelia and spherule cell walls"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 1435)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            th 100.0%; Score 52; DB 8; Length 1435; Similarity 100.0%; Pred. No. 3.5e-05; 52; Conservative 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                          Length 1234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene and
                                                                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 52; DB 8; Length 12
Best Local Similarity 100.0%; Pred. No. 3.5e-05;
Matches 52; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                         PTASTPAEFPGAGSNVRASVGGIAAALLGLAAYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhu, Y., Yang, C., Magee, D.M. and Cox, R.A.
Coccidioides immitis antigen 2: analysis of
Gene 181 (1-2), 121-125 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Coccidioides posadasiı"
/mol_type="genomic DNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                322 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 t
                                                                                                                                                                                                                                           /gene="Ag2"
/note="21 A nucleotides"
383 c 277 g 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        327 9
                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coccidioides posadasii
Coccidioides posadasii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U51200.1 GI:1256443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          414 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .1435
                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8973319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US1200
                                                                                                                                                                                                                             polyA site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
CIU51200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                      CIU32518 1234 bp mRNA linear PLN 04-NOV-1996 Coccidioides immitis antigen 2 (Ag2) mRNA, complete cds. U32518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                   8561782
2 (bases 1 to 1201)
2 (bases 1 to 1201)
Dugger, K.O. and Galgiani, J.N.
Direct Submission
Submitted (01-NOV-1995) Kris O. Dugger, Infectious Diseases,
Submitted (01-NOV-1995) Kris O. Campbell, Tucson, AZ 85724, USA
University of Arizona, 1501 N. Campbell, Tucson, AZ 85724, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (27-JUL-1995) Texas Center for Infectious Disease,
Research Immunology, 2303 S.E. Military Drive, San Antonio, TX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zhu,Y., Yang,C., Magee,D.M. and Cox,R.A.
Molecular cloning and characterization of Coccidioides immitis
antigen 2 cDNA
Infect. Immun. 64 (7), 2695-2699 (1996)
96294782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Coccidioides posadasii
Coccidioides posadasii
Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
Cloning and sequence analysis of the cDNA for a protein from Coccidioides immitis with immunogenic potential Biochem. Blophys. Res. Commun. 218 (2), 485-489 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78223, USA
On Feb 24, 1996 this sequence version replaced gi:1184058.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  152 ATGCAGTTCTCTCACGCTCTCATCGTCGTCGTCGCCGGCCTCGCCAGTG 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGTCGCCGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                           /organism="Coccidioides posadasii"
/mol_type="mRNA"
/strain="Silveira"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .1234 - "Coccidioides posadasii" / "Corganisa" - "Coccidioides posadasii" / "Anol type="mRNA" | strain="Silveira"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
100.0%; Score 52; DB 8; L
Best Local Similarity 100.0%; Pred. No. 3.5e-05;
Matches 52; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                    /db_xref="taxon:199306"
152_.736
/note="33 kDa_apoglycoprotein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db xref="caxon:199306"
/cell type="spherule"
1. .1234
/gene="Ag2"
175. .759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U32518.1 GI:1200179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 1234)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cox, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8698497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
JOURNAL
                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                         JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 2
CIU32518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
FEATURES
                                                                                              PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COS
                                                                                                                                                                                                           FEATURES
                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
```

g ò

8

```
Rattus norvegicus clone CH230-345D21, *** SEQUENCING IN PROGRESS ***, 2 unordered pieces.
ACL20087.4 GI:23194659
                                                                                                                                                                                                                                                                                                     Zhu,H., Lewin,H.A. and Roe,B.A.
Zhu,H., Lewin,H.A. and Roe,B.A.
Direct Submission
Submission
Submission
Submission
Submission
Submission
OK 73019, USA
OK 73019, USA
OK 73019, USA
OK 73019, USA
Center: Department Of Chemistry And Biochemistry,
Center: Department Of Chemistry And Biochemistry
The University Of Oklahoma
        1 (bases 1 to 197059)

Zhu, H., Lewin, H.A. and Roe, B.A.

Bos Taurus BAC Clone rp42-407c20

Unpublished

2 (bases 1 to 197059)

Zhu, H., Lewin, H.A. and Roe, B.A.

Binect Submission

Submitted (29-DEC-2001) Department Of Chemistry And Biochemistry,

The University Of Oklahoma, 620 Parrington Oval, Room 208, Norman,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ***NOTE: This is a "working draft' sequence. It currently consists of a contrige. Gaps between the contige are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

**This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

**Jato: Contig of 3409 bp in length 3409: Contig of 5877 bp in length 3409: Contig of 5877 bp in length 3509: aga of unknown length 9487 19601: Contig of 1015 bp in length 19602 19701: gap of unknown length 19602 19701: gap of unknown length 19702 37667: contig of 17273 bp in length 55040: Contig of 17273 bp in length 55040: Sontig of 18599 bp in length 55141 81739: Contig of 26599 bp in length 81740 81839: gap of unknown length 107642 107741: gap of unknown length 107742 197059: contig of 26599 bp in length 107742 197059: contig of 89318 bp in length 107742 197059: contig of 88318 bp in length 107742 197069: contig of 88318 bp in length 107641: contig of 88318 bp in length 107641: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 54.2%; Score 28.2; DB 2; Length 197059; Best Local Similarity 80.5%; Pred. No. 1.8e+02; Matches 33; Conservative 0; Mismatches 8; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .197059
/organism="Bos taurus"
/organism="Bos taurus"
/db_xref="taxon:9913"
/clone="rp42-407c20"
/clone="Rp42-407c20"
/clone="RP61" + 42 Male Bovine BAC Library"
/clone 105="RP61" + 42 Male Bovine BAC Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182200 TCGCTCCCGCTCTGCGCGCTCGTCGCTGCTTGCC 182240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 TCTCTCACGCTCTCATCGCTCTCGTCGCCGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.
     Sovidae, Bovinae, Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center code: UOKNOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39457 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 6
AC120087/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                          REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MOFSHALIALVAAGLASAQLPDIPPCALNCFVEALGNDGCTRLTDFKCHCSKPELPGGTTPCVEBACPLDARISVSNIVVDOCSKAGVPIDIPPVDTTAAPE
PSETAEPTAEPTEBPTAEPTAEPTAEPTAEPTEPTAVPTGTGGGVPTGTGSFTVTGR
PTASTPAEPEFGGGGVPTGTAALLGLAAYL"
981 c 903 g 1013 t
                                                                                                                                    AP013256 3821 bp DNA linear PLN 22-AUG-2000 Coccidioides immitis proline rich antigen (PRA) gene, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC105307 197059 bp DNA linear HTG 23-JAN-2003
Bos taurus clone rp42-407c20, WORKING DRAFT SEQUENCE, 8 ordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peng.T., Orsborn,K.I., Orbach,M.J. and Galgiani,J.N.
Direct Submission
Submitted (09-UU-1997) Infectious Disease, University of Arizona,
1501 N. Campbell, Tucson, AZ 85724, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
                                                                                                                                                                                                                                                                                                                                                                                                               Peng, T., Orsborn, K.I., Orbach, M.J. and Galgiani, J.N. Proline-rich vaccine candidate antigen of Coccidioides immitis: conservation among isolates and differential expression with
                                                                                                                                                                                                                                                                        Coccidioides posadasii
Coccidioides posadasii
Bukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Onygenales; mitosporic Onygenales; Coccidioides.
1 (bases 1 to 3821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 3821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="proline rich antigen"
join(896. .976,1055. .1193,1296. .1660)
/gene="PRA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 jōin(737. .976,1055. .1193,1296. .2126)
/gene="PRA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 .3821
/organism="Coccidioides posadasii"
/mol type="genomic DNA"
/strain="silveira"
/db xrefe="taxon:199306"
/gene="PRA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
100.0%; Score 52; DB 8; L
Best Local Similarity 100.0%; Pred. No. 3.2e-05;
Matches 52; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product="proline rich antigen"
/protein_id="AAB66894.1"
/db_xref="GI:2331289"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Infect. Dis. 179 (2), 518-521 (1999) 99094977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACI05307
ACI05307.12 GI:27764694
HTG; HTGS_PHASE2; HTGS_DRAFT.
BOB tautuß (COW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note="antigen 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                           AF013256
AF013256.1 GI:2331288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       spherule maturation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9878042
2 (bases 1 to 3821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pieces
                                                                                                                                                        DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                               RESULT 4
AF013256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC105307
```

ö

셤

```
Rattus norvegicus clone CH230-157MS, WORKING DRAFT SEQUENCE, 3
unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            • NOTE: Estimated insert size may differ from sequence length
• (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
• NOTE: This is a 'working draft' sequence. It currently
• consists of 2 contigs. The true order of the pieces
• is not known and their order in this sequence record is
                                                                                             and separated
(http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the fauture table below represents a scaffold in the Atilas assembly (a 'contig-scaffold'). Within each contig-scaffold, individual sequence contigs are ordered and oriented, and separated by sized gaps filled with Ns to the estimated size. The sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole genome shotgun sequence reads. Both end sequences and whole genome table.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          / Match. 52.7%; Score 27.4; DB 2; Length 219080; Local Similarity 75.6%; Pred. No. 3e+02; nes 34; Conservative 0; Mismatches 11; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               206570 CAGCICICICACGITCICACTICICAAGICICIACCTGCCICACC 206526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21053 21152: contig of 21052 bp in length 21053 211552: gap of unknown length 21153 219080: contig of 197928 bp in length. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="wgs_contig"
56238 a 44171 c 42521 g 57422 t 18728 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 CAGITCICICACGCICICATCGCICTCGTCGCTGCCGGCCTCGCC 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC126527.5 GI:30579006
HTG; HTGS PHASE1; HTGS DRAFT; HTGS_FULLTOP.
Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Contact: Project Information
Center project name: GVXA
                                                                                                                                                                                                                                                                                             Center: Baylor College of Medicine
Center code: BCM

    .219080
    /organism="Rattus norvegicus"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="genomic DNA"/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="CH230-345D21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="wgs_contig"
21153. .22325
/note="wgs_contig"
22827. .24533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC126527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                             Nurany, D.Marie., Maczker, M.Lee., Abramzon, S., Adams, C., Alder, J., Angualbecchi, V., Angualbarooks, S., Amin, A., Angualano, D., Angalbecchi, V., Barbarooks, S., Amin, A., Angualano, D., Bandaranike, D., Barbarok, S., Barbarooks, S., Calavaz, D., Chavaz, D., Chavaz, D., Chan, S., Chen, Y., Calecro, E., Cardenas, V., Careck, D., Chavaz, D., Chan, S., Chen, Y., Calecro, E., Cardenas, V., Cherer, K., Calecro, E., Cardenas, V., Cherer, M., Cabas, M., Cherer, M., Cabas, S., Erline, M., Engene, C., Evans, C.A., Pallar, T., Fand, G., Fernandaz, S., Fillaw, M., Hangen, C., Evans, C.A., Rallar, T., Fand, G., Fernandaz, S., Fillaw, M., Hand, C., Handlar, M., Cabbsis, A., Garrer, M., Gebregeorgis, B., Geer, K., Gill, R., Cardy, M., Gebregeorgis, B., Geer, K., Galla, R., Garcia, M., Gebregeorgis, B., Geer, K., Gallar, S., Hadwes, A., Henderson, N., Hernandez, S., Fillaw, P., Haves, A., Hadwes, D., Handerson, N., Hernandez, S., Fillaw, M., Hand, J., Chady, M., Hand, J., Chady, M., Hand, J., Haves, A., Hadwes, M., Hand, J., Haves, A., Hadwes, J., Lakas, J., Lak
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (03-MAY-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (08-OCT-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             On Sep 19, 2002 this sequence version replaced gi:21747318. The sequence in this assembly is a combination of BAC based reads and whole genome shotgun sequencing reads assembled using Atlas
                                                                                          Eukaryota; Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae,
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_ENRICHED.
Rattus norvegicus (Norway rat)
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 (bases 1 to 219080)
Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 219080)
                                                                                                                                                                                       (bases 1 to 219080)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Worley, K.C.
   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
```

Gaps

```
250805
251998
252098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64432 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                             To Coases I to 23323)

Allen, C. Allen, H. Alabrocks, S. Amin, M. Anguiano, D. Alder, J. Angulabechi, V. Auguiano, D. Anyogia, M. Anguiano, D. Anyalebechi, V. Auguiano, D. Anyalebechi, V. Auguiano, D. Anyalebechi, V. Auguiano, D. Anyalebechi, V. Buarte, D. Bandaranaike, D. Barber, M. Barnstead, M. Benahmed, F. Bladkin, D. Bubay, C. Burch, P. Burber, M. Barnstead, M. Benahmed, F. Bladkin, D. Bubay, C. Burch, P. Burber, M. Barnstead, M. Benahmed, F. Clarcho, J. Chavez, D. Chen, G. Chen, R. Caleron, E. Cheng, C. Chavez, D. Chen, G. Chen, R. Clen, Y. Cheng, D. Chen, G. Chavez, D. Chen, G. Chen, R. Clen, Y. Cheng, D. Cheng, C. Chavez, D. Chen, G. Chen, R. Caleron, D. Denson, S. Dersmo, C. Ding, Y. Din, M. Daya, R. Chen, Y. Depert, M. Daya, R. Chen, Y. Cheng, C. Chavez, D. Chen, G. Chen, R. Caleron, D. Denson, S. Dersmo, C. Ding, Y. Din, M. Daya, M. Cheng, D. Denson, S. Dersmo, C. Din, A. Canta, M. Coerer, M. Gabregocorgis, E. Geer, M. Gall, R. Cardy, M. Gerra, M. Gebregocorgis, E. Geer, M. Gall, R. Cardy, M. Gerra, M. Gebregocorgis, E. Geer, M. Hades, A. Henderson, M. Hernandez, M. Hanes, S. Hadun, S. L. Hadgen, L. Foster, M. Gebregocorgis, B. Geer, M. Gall, R. Cardy, M. Guerra, M. Gerra, M. Gardy, M. Hanilton, C. Hamilton, C. Hamilton, C. Hamilton, C. Hamilton, M. Manilton, M. Hamilton, M. Hamilton, M. Manilton, M. Marilton, M. Manilton, M. Marilton, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (13-MAY-2003) Human Generics Baylor College of Medicine, One Baylor Plaza, Houselon, TX 77030, USA

Baylor Plaza, Houselon, TX 77030, USA

May 13, 2003 this sequence version replaced gi:24819062.

The sequence in this assembly is a combination of BAC based reads and whole genome shorgun sequencing reads assembled using Atlas (http://www.hgsc.bcm.tmc.edu/projects/rat/). Each contig described in the feature table below represents a scaffold in the Atlas assembly (a 'contig-scaffold'). Within each contig-scaffold,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Worley, K.C.
Direct Submission
Submitted (16-JUL-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 (bases 1 to 253253)
Rat Genome Sequencing Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 253253)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
JOURNAL
                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
```

COMMENT

```
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
Contact: hgsc-help@bcm.tmc.edu
Conter project name: CH230-157M5
Center clone name: CH230-157M5
Center clone name: CH230-157M5
Consensus quality: 223138 bases at least Q40
Consensus quality: 225720 bases at least Q30
Consensus quality: 226500 bases at least Q30
Consensus quality: 226900 bases; sum-of-contigs estimation
Quality coverage: 7x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a "working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
individual sequence contigs are ordered and oriented, and separated
           by sized gaps filled with Ns to the estimated size. The sequence may extend beyond the ends of the clone and there may be sequence contigs within a contig-scaffold that consist entirely of whole genome shotgun sequence reads. Both end sequences and whole shotgun sequence only contigs will be indicated in the feature table.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 253253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 250704: contig of 250704 bp in length
250804: gap of unknown length
35 251997: contig of 1193 bp in length
8 252097: gap of unknown length
8 253253: contig of 1156 bp in length.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49523 c 48940 g 64796 t 25562 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52.7%; Score 27.4; DB 2; Length 2
75.6%; Pred. No. 3e+02;
ive 0; Mismatches 11; Indels
                                                                                                                                                                                               ....------ Genome Center
Center: Baylor College of Medicine
Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .244333)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="wgs_end_extension
clone_end:T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'note="wgs_end_extension
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="wgs_end_extension
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="genomic_DNA"
/db_xref="taxon:10116"
/clone="CH230-157MS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              end_sequence:BH286818"
complement(243837. .24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          end_sequence:BH286821"
246750. .248811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9685. ... 10077
/note="clone_boundary
clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="clone_boundary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         248862. .250704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone_end:Sp6
site:EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .253253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   site: EcoRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 75.6
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        i. .1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone
```

ò

```
gap of 100 bp
contig of 743 bp in length
gap of 100 bp
contig of 748 bp in length
gap of 100 bp
contig of 751 bp in length
gap of 100 bp
contig of 751 bp in length
gap of 100 bp
contig of 751 bp in length
gap of 100 bp
contig of 760 bp in length
gap of 100 bp
contig of 760 bp in length
gap of 100 bp
contig of 740 bp in length
gap of 100 bp
contig of 740 bp in length
gap of 100 bp
contig of 740 bp in length
gap of 100 bp
contig of 740 bp in length
gap of 100 bp
contig of 760 bp in length
gap of 100 bp
contig of 760 bp in length
gap of 100 bp
contig of 718 bp in length
gap of 100 bp
contig of 730 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 741 bp in length
gap of 100 bp
contig of 742 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig of 729 bp in length gap of 100 bp contig of 729 bp in length gap of 100 bp contig of 706 bp in length contig of 706 bp in length gap of 100 bp contig of 737 bp in length gap of 100 bp contig of 737 bp in length gap of 100 bp contig of 734 bp in length contig of 734 bp in length contig of 734 bp in length
                         gap of 100 bp
contig of 748 bp in length
gap of 100 bp
contig of 710 bp in length
gap of 100 bp
contig of 740 bp in length
gap of 100 bp
contig of 757 bp in length
gap of 100 bp
contig of 743 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         f 100 bp
g of 742 bp in length
f 100 bp
g of 721 bp in length
f 100 bp
g of 739 bp in length
f 100 bp in length
f 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
gap of
contig
gap of
     contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig
gap of
contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30185:
                                                                                      3362:
4072:
4172:
4912:
5012:
5769:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 9171:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29246:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29346:
                                                                                                                                                                                                                                                                                                                                       7460:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12638:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14244:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14344:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21863:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24250:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28425:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28525:
                                                                                                                                                                                                                                                                                                                                                                                                                       8420:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10862:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10962:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20147:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30085:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10095:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20910:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21010:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26859:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20047
     1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

1680

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dipublished

Barran, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barran, V., Baguslavkiy, L., Boukhgalter, B., Brown, A., Camarata, J., Campopiano, A., Cooke, P., Chengel, Y., Colangelo, M., Collims, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Faro, S., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Faro, S., Ferreira, P., Fitzhugh, W., Gage, D., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Karatas, A., Lakoque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacCand, P., Marquis, N., Mathews, C., McCarthy, M., McDewan, C., McGarthy, M., McDewan, C., Macdonald, P., Marquis, N., Mathews, C., McCarthy, M., McDewan, C., Norbu, C., Norbu, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Reterson, K., Phukhang, P., Pierre, N., Pollara, V., Raymond, C., Retta, R., Raback, M., Santos, R., Schauer, S., Schupback, R., Seaman, S., Scoty, P., Sougnez, C., Spencer, B., Stange, Theodore, J., Travers, M., Travis, N., Trayilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, M., Wyan, M., Wann, J., Viel, R., Vo, A., Wilson, M., Wann, J., Viel, R., Vo, A., Wilson, M., Wann, J., Voller, M., Wann, J., Voller, M., Wann, Wann, M., Wann,
                                                                                                                                            55939 bp DNA linear HTG 24-MAR-2001
HOMO Sapiens Chromosome 17 clone RP11-64A4 map 17, LOW-PASS
SEQUENCE SAMPLING.
                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (14-MAR.2001) Whitehead Institute/MIT Center for Genome Street, 120 Charles Street, Cambridge, MA 02141, USA All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://fip.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOTE: This record contains 67 individual
contigo. Runs of N are used to separate the reads
and the order in which they appear is completely
arbitrary. Low-pass sequence sampling is useful for
identifying clones that may be gene-fich and allows
overlap relationships among clones to be deduced.
However, it should not be assumed that this clone
will be sequenced to completion. In the event that
the record is updated, the accession number will
be preserved.
Center code: WIBR
Web site: http://www-seq.wi.mit.edu
Contact: sequence_submissionségenome.wi.mit.edu
Center project Information
Center project name: L11979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig of 740 bp in length gap of 100 bp contig of 739 bp in length gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 5593)
Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens chromosome 17, clone RP11-64A4
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center clone name: 64_A_4
                                                                                                                                                                                                                                                                                                 AC091017.1 GI:13443169
HTG; HTGS PHASE0.
Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             740:
840:
1579:
1679:
                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                      RESULT 8
AC091017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
```

```
Direct Submission

Direct Submission

University, 100 Jordan Hall, Clemson, SC 29634, USA

Clemson University, 100 Jordan Hall, Clemson, SC 29634, USA

4 (bases 1 to 148301)

By Ming, R.A., Yu, Y., Soderlund, C., Chen, M., Kim, H., Rambo, T., Saski, C., Henry, D., Oaces, R., Simmons, J., Thurmond, S. K. and Sun, S.

Direct Submission

Submission

Clemson University, 100 Jordan Hall, Clemson, SC 29634, USA

E. (bases 1 to 148301)

By Ming, R.A., Yu, Y., Soderlund, C., Chen, M., Kim, H., Rambo, T., Saski, C., Henry, D., Joaces, R., Simmons, J., Thurmond, S. K. and Sun, S.

Ming, R.A., Yu, Y., Soderlund, C., Chen, M., Kim, H., Rambo, T., Saski, C., Henry, D., Joaces, R., Simmons, J., Thurmond, S. K. and Sun, S.

By Ming, R.A., Yu, Y., Soderlund, C., Simmons, J., Thurmond, S. K. and Sun, S.

Saski, C., Henry, D., Joaces, R., Simmons, J., Thurmond, S. K. and Sun, S.

Licet Submission

Direct Submission

Submitted (14-FEB-2002) Clemson University Genomics Institute, Clemson University, 100 Jordan Hall, Clemson, SC 29634, USA

Clemson University, 100 Jordan Hall, Clemson, SC 29634, USA

This sequence was finished as follows unless otherwise noted: all regions were either double stranded or sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality as compressions and repeats; all regions were covered by more than one plasmid subclone; and the assembly was confirmed by restriction digest. The following are single sub-clone areas: 1616-1640, 13395-13416, 49634-49704, 67439-67512, and 67612-67642. There are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(join(266. .315,745. .930,1296. .1551,1621. .2295))
/gene="OSJNBa0051J07.1"
      AC098566 148301 bp DNA linear PLN 14-FEB-2002
Oryza sativa chromosome 10 clone OSJNBa0051J07, complete sequence.
AC09856
                                                                                                                                                                   Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Ehrhartoideae, Oryzeae, Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (266. .2295)
/gene="OSJNBa0051J07.1"
/note="Contains similarity to wall-associated protein
                                                                                                                                                                                                                                                                                                                                                          Wing, R.A., Yu, Y., Soderlund, C., Chen, M., Kim, H.-R., Rambo, T., Saski, C., Henry, D., Oates, R. and Simmons, J.
Direct Submission
Submitted (24-OCT-C01) Clemson University Genomics Institute, Clemson University, 100 Jordan Hall, Clemson, SC 29634, USA Wing, R.A., Yu, Y., Soderlund, C., Chen, M., Kim, H.-R., Rambo, T., Saski, C., Henry, D., Oates, R. and Simmons, J.
                                                                                                                                                                                                                                    1 (bases 1 to 148301)
Wing.R.A., Yu.Y., Soderlund,C., Chen,M., Kim,H.-R., Rambo,T.,
Saski,C., Henry,D., Oates,R. and Simmons,J.
Rice Genomic Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Oryza sativa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="genomic DNA"
/db_xref="taxon:4530"
/chromosome="10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="OSJNBa0051J07"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                             AC098566.3 GI:18390165
                                                                                                                                                                                                                                                                                                                                               (bases 1 to 148301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kinase"
                                                                                                                                                Oryza sativa
                                                                                                                                                                                                                                                                                                                        Unpublished
               LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2; Length 55939;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37378 TGGTGTTCTTTGCGCCCCCTCTCTCTTCGGTGCTCGCCTCGC 37423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 TGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGC 47
of 750 bp ...
f 100 bp ...
cig of 719 bp in lens ...
f 1048 bp in length bp in length bp in length ...
bp in length ...
length ...
length ...
length ...
length ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 26.8; DB 2; Length 5:
Pred. No. 5e+02;
0; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                        100 bp
1 of 734 bp in length
100 bp
1 of 681 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100 bp
of 743 bp in length
100 bp
of 743 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 bp
of 751 bp in length
100 bp
of 748 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100 bp
of 742 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of 100 bp
contig of 700 bp in length
gap of 100 bp
                                                                                                                                                                                                                                                of 749 bp in length
100 bp
of 737 bp in length
                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100 bp
of 761 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 bp
of 734 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 bp -
of 742 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100 bp
of 724 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 bp
of 740 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of 100 bp
contig of 714 bp in length
                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                              100 bp
of 748 bp
                                                                                                                                                                                                                                                                                                             100 bp
of 672 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 bp
of 723 bp i
                                                                                                                                                                                                         743 bp
                                                                                                                                                                                                                                100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .559.3"
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig of
gap of 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig c
gap of 1
contig c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                             contig
gap of
                                                                                                                     contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                               contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                contig
                                                                                                                                                                                                                                                                                                                                        contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                              contig
                                                                                                                                                                                                                                                         contig
                                                                                                                                                                                                                                                                                                                                                                                     contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig
                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                                                             gap of
                                                                                                                                                                                                                                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                  gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match
Best Local Similarity 73.9%;
Matches 34; Conservative
                                                                                               34362:
35110:
                                                                                                                                                                                                                                                    7663:
                                                                                                                                                                                     36071:
                                                                                                                                                                                                              36814:
                                                                                                                                                                                                                                  36914:
                                                                                                                                                                                                                                                                                                                                                                                                                            40887:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41835:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43534:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16033:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53585:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54425:
                                                                                                                                                                                                                                                                                                                                                                                   10106:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44269:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44369:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45188:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51919:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52661:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        53485:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55939:
                                                                                                                                                                   5971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51085
                                                        33444
3335444
334563
334563
335211
335211
335211
336615
336615
336615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
346615
36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41136
41836
42587
42687
43435
43535
44270
44270
44270
44270
44270
46034
46034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      47697
48440
48540
49283
49383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50144
500144
51086
51820
52662
52762
53768
53768
53768
53768
57762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठ
```

GNISIPFPEGTKQSSCFLPGFEVTCNDTFSPPRLFLGNSNPGGRQNYQEFEERYYLTT
EEGMPTHLATDDFLFRELMSINLTEGVARAYGPVSSDCSLNDTYHLVKRQMTGLAGPF
LISTRNALTATGWMBANLARSVRGSGFLKTCGVRTGOPEFATNGSCLGGGCCQCGIT
QGIGSIAKDWYNFTSBDLYSDNFSKYPKGVPLVIDFAIRDFCPAAGQAPPANYACV
SSNSSCVNVTNGDGYICNCSKGYDGNPYIPNOCHDIDECALRDSHPELRVLYPCSRNG
ICMNRPGGYDCPCKRGMSGDGKAGTCSEKFPLQAKIVVGDVRVKDKMDEVENTE" /translation="MLMILPCRLLLRLVLATLLILAASTDOHVATLPPITLPGCIDKC /codon\_start=1 /product="Putative wall-associated protein kinase" /protein id="AAL77114.1" /db\_xref="G1:18652480"

RESULT 9 AC098566

```
.42862)
                                                                    /product = "putative wall-associated protein kinase"
/protein id="AAL77119.1"
/protein id="AAL77119.1"
/brotein id="AAL77119.1"
/brotein id="AAL77119.1"
/brotein id="AAL77119.1"
/brotein id="MRSKFLEFTLEAITVLUWQAISRMTTVAVDORSPRRIALPGC
PDKCGDISIPYPFGTKEGCYLDINFIVLCNLSTTPPATAAGTIILKGNGYYFGDQENP
WGOTNRKSWWTVDLIDIDVTRGEVRYAVPVSSSTRRESYPHELSIFTOGSNEFTELF
SAATRAVLGGGSVRARIDGWRGGTNYSAGNSIFFTPPATAGGCGCGAELAP
ELGMITVSMYKQSNSWMETFPCTYAMVVERSWYNFSLODLYGYDVLDKKFPGGVPLUL
PATRINESCPAEGKPLPAACRSSNSLCVNTTNGGGYVCKCQEGYEGNPYLPDGCQGUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (japonica cultivar-group) chromosome 10, section 17 of 77 of the complete sequence.
AE017063 AE016959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="Putative wall-associated protein kinase"
/protein_id="AaL77120.1"
/db_xref="G1:18652486"
/tb_xref="G1:18652486"
/translate="MEGNTPFFSQFSSDPGSSAAGFNLSSAAGFYGCSSCSMLAMLFORNSAAGGAGTMEGADIDECELRDEOPALRDOYRCYGICKNTIGGYDCQCKFGTKGDBAKTGTCTQLFPLPAMVATLG1IGLTSIVVVVVLFKLLFDERRKTKEFFIKNGGPVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKVDNIKIFKKEELKPIIGSCNVIGKGGFGEVYKGLIDDKLVAIKKSINVDKLOEKOF
TNBIIJGSKVTHKNIIKLIGCCLEVDYDMLVYEFSPROSLHDTLHGNKESLPLOKRL
NIAAAAEGLAYMHSKTSTTILHGDIK PGNILLDENPDKISDFGISRLIAIDKTHTK
CVIGDMCYMDPIYLOSGLLTKOSDVYSFGVVLLELLTROKASGEDTRLVTTFLDAYT
ENDKGAIDDFREILLEGDTEVFNNLAILVVDCLKFEVERRPEMTDVEERLOTMKRSY
VPKSISDASSSIDT"
45047. 45528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /trānslation="MSGAIALVAEHRDMSIWVIGFDICLFTAVYSGIVCSGVAYYVQG
LVTRAQGPVFVSAFQPLCMIITSVLDSTILREDITLGSVIGAVIIAVGLYALIWG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /trānslation="MEVEVENQLDRKIKRLRSNCGGEFFSNKFDLFCEEHGIIHERTP
PYSPESNGIAEINEADKCVYYRYGGGEGVILYLYVVDDILIVGTNFEVINEVKSFLSKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                             join(39770. .39860,40240. .40335,40997. .41179,41838.
/gene="OSJNBa0051J07.7"
                                                                                                                                                                                                                                                                                                                                                 /gene="OSJNBa0051307.7"
/note="Contains similarity to wall-associated protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Note="Contains similarity to nodulin protein"
join(45047. .45139,45236. .45387,45474. .45528)
/gene="OSJNBa0051307.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Contains similarity to polyprotein"
join(55288. .55293,56061. .56220,57182. .57537)
gene="OSJNBa0051J07.9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; DB 8; Length 148301;
5.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/product="butative nodulin protein"
/protein id="AAL77121.1"
/db_xref="G1:18652487"
join(35194. .36187,36296. .36318)
/gene="OSJNBa0051J07.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="Putative polyprotein"
/protein_id="AAL77122.1"
/db_xref="G1:18652488"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (japonica cultivar-group)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Score 26.6; DE
; Pred. No. 5.3e+
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene="OSJNBa0051J07.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="OSJNBa0051J07.9"
                                                    /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:31430446
                                                                                                                                                                                                                                                                                                                                  .42862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51.2%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE017063.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
AE017063
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                SGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _note="Hypothetical protein"
|oin(29124. .29317,29445. .29576,29765. .29840,30066. .30449)
|gene="OSJNBa0051J07.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_gtarr=1
/product="Hypothetical"
/protein_id="Hypothetical"
/protein_id="MAL77117.1"
/db_xref="d1:l8652481"
/translation="MACPVMEACLOGIVGDGAADPGGWVSDVGVASPLDEVASLGEWA
/translation="MACPVMESKQPDMIPEGRAGGPEDAUVDHAMOAGALEASFSFTMLP
LPATMECYWEIGVNEDGNDGSNDVGRENILENGGIIEWRGWAVDITGRWNHGVSFWR
TVGEARRSKKGGKVQRHGCQGRBAMGTMGRNVAGMDIACRVVTAAADAGEGVRGSVTT
GVGARAVVAVPKLSAGGEGAKRRSLRTVKSASRAASBAHVAAF"
                                                                                                                                                                                                                                                                                                                    /product = Putative Athila retroelement ORF1 protein"
/protein id="AAL77115.1"
/protein id="AAL77115.1"
/protein id="AAL77115.1"
/protein id="G1:18652481"
/translation="MPELSIFOLSVPRGEFYEPPSSEHILSPGYQIRPKFISMVREK
SFSGLGOENPYHHLREFEOLGSCLKIRGMKQEVVQWRLPFSLHERAKQWYTSTVECV
NGNWEKLRDRFCLAFFAVTRITTLRVBILSFRESAFYLDITAGGSFMHKTPAEGKEIL
DRISENTSFYGQCVEPHPBAFVSGSEEPSFAKPETEPSTCSGLTKESSLKPSPDSKDI
DRISENTSFRDDPHSDYEKT"
/protein retroelement ORF1
/protein retroelement ORF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="Hypothetical protein"
/protein_id="AAL/7116.1"
/db_xref="C1:18652482"
/translation="MAHASQFEPERRNEDASAHLQQFLEICSTYTMKGEYVAAVLIMGW
TTGSSYRVSTWOSTHOSLIGGSPRCYAGGAFFSKTYRAAIDLFEKMYPTMGWSERLCTRQR
GMHTVKETEMLTTKLDLLVKKLDNQEKGKPQAAVKALDSHITCEVCGNTGHMGNDYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="Contains similarity to Athila retroelement ORF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15194. .36318
/gene="OSJNBa0051J07.6"
/note="Contains similarity to wall-associated protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(26603. .26741)
/note="Similar to Stowaway type MITE element"
29124. .30449
                       note="Similar to Tourist_Oll MITE element"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (32525. .32675)
//note="Similar to Tourist_Oll MITE element"
                                                                                                             /note="Simple Sequence Repeat (AGAT)n"
12889. 13728
/gene="OSJNBa0051J07.2"
                                                                         note="Simple Sequence Repeat (TA)n"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18054. .18073
/note="Simple Sequence Repeat (TA)n"
18680. .19432
/gene="cSJNBa0051J07.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   notes"Hypotherical protein"
|oin(18680. 18778,19007. 19432)
|gene="OSJNBa0051J07.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="Hypotherical protein"
join(31823. .32131,32929. .32958)
gene="OSJNBa0051J07.5"
                                                                                                                                                                                                                                              join(12889. .13289,13413. .13728)
/gene="OSJNBa0051J07.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'gene="OSJNBa0051J07.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31823. .32958
/gene="OSJNBa0051J07.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TREEAMFMGNNGYR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DDNILAPLCK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein"
18054. .1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kinase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
  repeat_region
                                                    repeat_region
                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
```

σ

```
complement (<34426. .>35324)
/locus tag="OSJNBaO061120.10"
/note="hypothetical protein"
complement (join(<44426. .34543,34635. .34835,35161. .>35324))
/locus_tag="OSJNBaO0611420.10"
complement (join(<44426. .34543,34635. .34835,35161. .35324))
/locus_tag="OSJNBaO0611420.10"
/codon_start=1
/product="hypothetical protein"
/protein_id="AAP52359.1"
/db_xref="G1:3143048.0"
/translation="MMAVARHIMGHVLSSAPTNEHDCSVTGLPMNSGGATEARSLYVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HPREGGARDY TELGAS ERGIS ENGUS ADACUSABLE GUILDER PUR Y DELGAS PER A PARCUSABLE GUILDER PUR Y DELGAS PER SERIO SERI
                                               contains pfam domain: rvt Reverse transcriptase (RNA dependent D e value 4 le 55; contains pfam domain: rve Integrase core domain e value 6 le 36; Co" complement (join(~21422. 21824, 22056. .25325,25369. .25920,26188. .25993.77928. .28083))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HYHPGKANVVADALSRKSHCNTLAVRGIPLELNQOMBALNLSIVGRGFLAALEAKPTL
LDQT REAQKWODPMRCLLKOMKGGKATGFTEDEHFTLANGRNCVPDPNELKQLILQG
HAESPYSIHPGSTRWKTLDLKKKYWWVSMKREIAEFVALCDVCORVKAEHQRPAGLLQD
LQVPEWKWDBIGMDFITGLPKTQGGYDSIWVVVDRLTKVARFIPVKTYGGNKLAELY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RIIARRGEVAYQLELPASLGNYHDVFHVSQLKKCLRYVPSEQAGSEQIEVREDLTYVER
PVKILDTMERRTRNRVIRFCKVQMSNHAEEEATWEREDELKAAHPDLFASSSESRGRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FARIVSLHGVPKKIVSDRGSOFTSHFWKKLOEELGTRLNFSTAYHPQTDGQTERLNOI
LEDMLRACVLDFGKTWDKSLPYAEFSYNNSYQASIOMAPYEALFQTKGKLAPRFVGPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PPLEPEETLVALKLSPGQKASTFPDTHAAGRHHPLHWDSAPTQLELDLNPLEEVGILQ
AAVGSNFSFSNSKEAVRGRGLATYTLSRRVPASGDAEDFVPDCGSHLGMVGKEQEERG
                                                                                                                                                                                                                                                                          complement(join(21422...21824,22056. .25325,25369. .25920,
26188. .26993,27928. .28083))
/locus_tag="OSJNBa0061H20.9"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="mgmhragvlllgaqsclpvpgvtavggigsvllstarmgwklch
vfrlytvvmagsvsrrgldmtgfvlelrgmcvvlgyphgvdyqarplpeqegddaeph
Aawevtaviltgspertslavtaggdsfpaacqsaallaigtlhqrypdelqhspyry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /trānslation="MDESSDLQWRQGWLAVGLPPAPVVAVSAIVGFFLYLTWQMDEYE
EQLRRRTQAGLWVLLVLGAVALVLLGSHALVDAGGRVAVPVSWRWGGGYGGSSGDDGG
        PROTEIN E value e 126 Identities 264 1333 (of subject);
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="putative retroelement"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product="hypothetical protein"
/protein_id="AAP52360.1"
/db_xref="GI:31430451"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (<16243. .>36653)
/ locus tag="GSJNBa0064H20.11"
/note="hypochetical protein"
complement (<16243. .>36653)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /locus tag="OSJNBa0061H20.11"
complement (36243. .36653)
/locus_tag="OSJNBa0061H20.11"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAP52358.1"
/db_xref="GI:31430449"
                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                               SOS
                                                                                                                                                                                                                                                                                                                                                                                                  Euell, C.R., Wing, R.A., McCombie, W.R., Messing, J. and Yuan, Q. Direct Submission

Direct Submission

Submitted (05-MAY-2003) The Institute for Genomic Research, 9712

Medical Center Dr., Rockville, MD 20850, USA

This is the pseudomolecule for rice chromosome 10, which was constructed by resolving discrepancies between overlapping BACs, trimming the overlap regions, and linking the unique sequences to form a contigous sequence. Genes in individual BAC clone were identified by a combination of several methods: Gene prediction programs, searches of the complete sequence against a peptide database and EST databases. Genes with similarity to other proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Chromosome Sequence Derivation: nucleotide sequence
in this region was derived from BAC clone OSJNBa0061H20
(GB:AC113337)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="OSJNBa0061H20.7"
/codon_start=1
/codon_start=1
/producf="hypothetical protein"
/protein_id="AAP52356.1"
/db_xref="G1:31430447"
/tb_xref="G1:31430447"
GEGRRQLRLSSNVPRATTLSTAAQCVLVVGGILLARATVRQEHGQRPLRLPS
GSGRRQLRLSSNVPRONGLRRRQLRREDRARHYVWGHGDSAHLLGGGAIAIPDVFLVG
GLDERCIKPAQCHPSAS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /produčt="hypothetical protein"
/protein_id="AAF52357.1"
/brotein_id="AAF52357.1"
/db.xref="color: 131430448"
/translation="MAPAHGRELASKGGSGNHALPSARSGGRAGAMGAKGMGTWLFLFFSDGADGMETCGWSRGGDKGLLLRAQGSCLRRMHPLPGASVMRCQMCQKRNVISVGCLONYRBIGHTCHWSSKLDSDPPSVMTAISLLQPGSDEKQAVIVIM"
Oryza sativa (japonica cultivar-group)
sukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(<21422. >28083)
/locus tag="OSJNBa0061H20.9"
/note="Similar to RETROTRANSPOSABLE ELEMENT TF2 155 KDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       are named after the database hits. Genes without significant peptide similarity but with EST similarity are named as unknown proteins. Genes without protein or EST similarity, that are predicted by more than two gene prediction programs over most of their length are annotated as hypothetical proteins. Genes encoding IRNAs are predicted by tRNAscan-SE (Sean Eddy, http://genome.wustl.edu/eddy/tRNAscan-SE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /locus_tag="OS.NBa0061H20.8"
/noce="hypothetical protein"
join(68040. a)32,8749. 8836,9821. .9901,10626. .10672,
11374. .>11514)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="OSJNBa0061H20.8"
join(8040. .8132,8749. .8836,9821. .9901,10626. .10672,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Oryza sativa (japonica cultivar-group)"
/mol type="genomic DNA"
/cultivar="Nipponare"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                            The Rice Chromosome 10 Sequencing Consortium In-depth view of structure, activity, and evolution of rice chromosome 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <3288. .>3647
/locus tag="OSJNBa0061H20.7"
/note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /locus_tag="OSJNBa0061H20.7"
3288. .3647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                locus_tag="OSJNBa0061H20.8"
                                                                                                                                                                                                                                                                                                                                                                    Science 300, 1566-1569 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  chromosome="10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (1374. .11514)
                                                                                                                                                                   (bases 1 to 306067)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <1. .100654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .306067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                     AUTHORS
CONSRTM
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
```

```
/product="trypsin-like protease"
/protein id="AAC6177.1"
/db xref="G1:3661612"
/translation="MHFTDVLIALAAPALISAAAIPODPEFPEGEFPEDPIVGGTTAS
AGDPFIVSIQGSGHFCGGSLLNATVLTAAATVOVGATASSLQIRAGSLRSFFSGGTV
VKVSSIKVNPSYAAGTYNNDVAIMKLATSIPTSSTISYAKLASSGSDPAAGTGLTVAG
WGTTSSGGGSLPVNLLXVDVPVJRSFTCNSRYGSGRITTAMFCAGLSGCGKDSCGGD
GGPIINTSSRVQVGVVSWGEGCASAGAPGVYSNLGOSSLASFVAANL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AP004769 135357 bp DNA linear HTG 21-FEB-2002 Oryza sativa (japonica cultivar-group) chromosome 2 clone P0017C12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Published Only in Database (2002)

2 (Dases 1 to 13537)

Sasaki,T., Matsumoto,T. and Yamamoto,K.

Direct Submission

Submitted (20-FEB-2002) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2. Tsukuba. Ibaraki 315-862, Japan (E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-7441, Fax:81-298-38-7468)

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oryza satīva (japonica cultivar-group)
Oryza satīva (japonica cultivar-group)
Coryza satīva (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                               2 (bases 1 to 3582)
Carlile,A., Bailey,A., Cooper,R. and Clarkson,J.
Direct Submission
Submitted (16.5EP-1998) Cell Biology, IACR-Long Ashton Research
Station, Long Ashton, Bristol BS41 9AF, United Kingdom
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1366 ATGCACTTCACAGACGTCCTCATTGCCCTCGCGGCTCCCGCTCTCATCAGCG 1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sasaki,T., Matsumoto,T. and Yamamoto,K.
Oryza sativa nipponbare(GA3) genomic DNA, chromosome 2, PAC
clone:P0017C12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50.8%; Score 26.4; DB 8; Length 3582; 69.2%; Pred. No. 8.4e+02; tive 0; Mismatches 16; Indels 0
  during infection by Stagonospora nodorum
Mol. Plant Microbe Interact. 13 (5), 538-550 (2000)
20255037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16; Indels
                                                                                                                                                                                                                                                                                                                                                   /gene="snp1"
/gene="trypsin-like protease"
/pin(1366..1647,1704..2219)
/gene="snp1"
/note="SNP1"
                                                                                                                                                                                                                                             /organism="Phaeosphaeria nodorum"
/mol_type="genomic DNA"
/strain="LAMM95"
/db xref="taxon:13684"
<1366. .>2219
/gene="snp1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       863 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   925 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AP004769.1 GI:18844985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1048 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 50.8
Best Local Similarity 69.2
Matches 36; Conservative
                                                                                                                                                                                                                                      . .3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTG; HTGS PHASE2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AP004769
                                                                               10796020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                               PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AP004769
                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement (join(<46990. .47063,47139. .>47628))
/locus_tag="OSJNBa0061H20.13"
/locus_tag="OSJNBa0061H20.13"
complement (join(46990. .47063,47139. .47628))
/locus_tag="OSJNBa0061H20.13"
/codon_start=1
/product="Mypochetical protein"
/product="Mypochetical protein"
/protein id="MAP52362.1"
/db_xref="G1:3143048518212"
/db_xref="G1:3143048587HAGVVBDERDHANDALEHAPERRRFDIVVDRPF
LITEAGAAVPRISPRPPLODASRTAGVVKDSENASFASRRRSRIASAIIVDYRCLGE
PLEDSSRIHHLHNITNILDHAMQVLELFEPSPFPRGGALPSNRSNQSRCYPSFGDFF
LQLVTAHVYLPLILIGATPMSPSOEN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus tag="OSJNBa0061H20.14"
join(55583. .55736,56130. .56253,56590. .56654,57014. .57051,
57776. .57855,58053. .58197,58489. .58621,58778. .58990,
59410. .59488,59804. .60854,60932. .61306,61323. .61773,
                                                                                                  .42427,42908. .>43138))
GASPWAVAAVLAULASHKPSFQMFRPPWHYK"

complement (<40948. .>43138)

/locus_tag="OSJNBa0061H20.12"

/note="hypothetical protein"

complement (join (<40948. .41069, 42322. .42427, 42908. .>43138)

/locus_tag="OSJNBa0061H20.12"

complement (join (40948. .41069, 42322. .42427, 42908. .43138))

/locus_tag="OSJNBa0061H20.12"
                                                                                                                                                                                                        /product="hypothetical protein"
/protein id="AAP52361.1"
/db_xref="01:31430452"
/translation="WAGLSKGISPHAQHRHLRRVMRNDQHDQDEVSDIVLGKIKYGL
PYFEGNYNPHYYINWELAVDSKFKKHGLSEKQKEVHHREMEERDMKEPIVPLFTLKVE
APPSSEEGIKGIRLICISKFNNPRRGVSIAKAQHNVSYGCNQIVNVSPKS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 03-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF092435
Phaeosphaeria nodorum trypsin-like protease (snpl) gene, complete
                                                                                                                                                                                                                                                                                                                      complement (<46990...347628)
/locus_tag="OSJNBa006H20.13"
/note="Similar to (AP003853) zetal COP like protein (Oryza sativa) E value 2e 30 Identities 75 215 (of subject)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                277810 ATCCACTTCTTCTCTCTCTCACTCTCCTCCCTCCCGGCCTTCTCCA 277858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 306067;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGCAGTTCTCTCACGCTCTCATCGTCGTCGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 26.6; DB; Pred. No. 5e+02; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . .>63122
                                                                                                                                                                                        /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF092435
AF092435.1 GI:3661611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51.2%;
71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Phaeosphaeria nodorum
Phaeosphaeria nodorum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 35; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF092435
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                               SOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
```

유 ò

us-10-081-935-1.rge

```
LEISERTHRE 27-SEP-1993 Leishmania chagasi (clone Cl) protein phosphatase-2C gene, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Original source text: Leishmania donovani (individual isolate MHOM/BR/82/BA-2, sub_species chagasi) promastigote DN\overline{\lambda}.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Leichmania.

Leichmania.

1 (bases 1 to 2595)

Burns, J.M. Jr., Parsons, M., Rosman, D.E. and Reed, S.G.

Burns, T.M. Jr., Parsons and Characterization of a 42-kba protein phosphatase of Leichmania chagasi

T. G.M. Chem. 268 (23), 17155-17161 (1993)
is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N. but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 50.4%; Score 26.2; DB 2; Length 230357; Best Local Similarity 79.5%; Pred. No. 6.7e+02; Matches 31; Conservative 0; Mismatches 8; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein phosphatase-2C; serine/threonine phosphatase.
Leishmania donovani
Leishmania qonovani
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae;
                                                                                                                                                   1255: contig of 1255 bp in length
1155: gap of unknown length
21952: contig of 20597 bp in length
22052: gap of unknown length
52473: contig of 30421 bp in length
52473: gap of unknown length
95111: contig of 42518 bp in length
95211: gap of unknown length
135051: contig of 39840 bp in length
135151: gap of unknown length
135151: gap of unknown length
1701010: contig of 35759 bp in length
1701010: gap of unknown length
171010: gap of unknown length
171010: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            681 others
                                                                                                                                                                                                                                                                                                                                                                                                                                    1 230357: contig of 59347 bp in length.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            107371 ATGCAGTGCTCTCACCCACTGAGCGATCTCCCCGCTGCC 107409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95212. .135051

/note="assembly_name:Contig35"

135152. .170910

/note="assembly_name:Contig36"

171011. .230357

/note="assembly_name:Contig37"

a 50684 c 50723 g 65054 t 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_name:Contig32"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2053. .52473
/note="assembly_name:Contig33"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_name:Contig34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="assembly_name:Contig28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="genomic DNA'
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="RP23-406J20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chromosome="UNK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1356. .21952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .230357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L15559.1 GI:293067
                                                                                                                                                                                1256
1356
21953
22053
22053
52474
95112
95212
135052
135052
135152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
LEISERTHRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  윱
            are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

• NOTE: This is a 'working draft' sequence.

• This sequence will be replaced

• by the finished sequence as soon as it is available and the accession number will be preserved.

• Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTG 23-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       McPherson, J.D. and Waterston, R.H.
Direct Submission
Submitted (23-FEB-2003) Genome Sequencing Center, 4444 Forest Park
Parkway, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus. 1 (bases 1 to 230357)
MCPherson, J.D. and Waterston, R.H.
The sequence of Mus musculus clone
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        230357 bp DNA linear HTG 23-F.
Mus musculus chromosome UNK clone RP23-406J20, WORKING DRAFT
SEQUENCE, 7 unordered pieces.
AC140331
                                                                                                                                                                                                                       /organism="Oryza sativa (japonica cultivar-group)"
/mol type="genomic DNA"
/cultivar="Nipponbare"
/db xref="taxon:39947"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                Length 135357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequencing vector: M13; 0% Sequencing vector: plasmid; 100% Chemistry: Dye-primer ET; 0% of reads Chemistry: Dye-primer ET; 0% of reads Chemistry: Dye-primer ET; 0% of reads Assembly program: Phrap; version 0.990319 Consensus quality: 229568 bases at least Q40 Consensus quality: 230223 bases at least Q30 Consensus quality: 230276 bases at least Q20 Insert size: 196000; agarose-fp Insert size: 294718; sum-of-contigs Quality coverage: 17.67 in Q20 bases; sum-of-contigs Quality coverage: 11.05 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: This is a 'working draft' sequence. It currently consists of 7 contigs. The true order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      35193 TGCAGGCCTCCAGGCCTCGAGGCCCACGTCGCCGCCCCGCCTCGCC 35239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center: Washington University Genome Sequencing Center Center code: WUGSC Web site.http://genome.wustl.edu/gsc/index.shtml Contact: submissions@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC140331.1 GI:28475582
HTG; HTGS PHASE1; HTGS_DRAFT; HTGS_FULLTOP
Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 26.2; DB 2
Pred. No. 7e+02;
0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                              28659 c 29003 g 39973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----- Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .---- Genome Center
                                                                                                                                                                                                                                                                                                                                         /clone="P0017C12"
                                                                                                                                                                                                                                                                                                                                                                                                                                  50.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 230357)
                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match
Best Local Similarity 72.3
Matches 34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus
                                                                                                                                                                                                                                                                                                                                                                 37722
                                                                                                                                                                                                        Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
AC140331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                              FEATURES
```

g ઠે

ö

Gaps

```
Longished Only in Database (2002)

Sasaki. T., Matawooto, T. and Katayose, Y.

Sasaki. T., Matawooto, T. and Katayose, Y.

Direct Submission

Submitted (07-AUG-2002) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 30-8602, Japan

E-mail:tsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-746)

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* This sequence will be replaced

* Worth: This is a 'working draft' sequence.

* This sequence will be replaced

* by the finished sequence as soon as it is available and

* the accession number will be preserved.

Location/Qualifiers

irce

1. .149082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Oryza sativa (japonica cultivar-group) chromosome 9 clone P0646C08, *** SEQUENCING IN PROCRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AP005635.1 GI:22138859
HTG; HTGS:PHASED.
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Sukaryota, Viridiplantae; Streptophyra; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sasaki,T., Matsumoto,T. and Katayose,Y.
Oryza sativa nipponbare(GA3) genomic DNA, chromosome 9, PAC
clone:P0646C08
runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1416 ATGGAGTTCTCTGAACCTCTGCTGGCTCTGAGGCTGCCTGACTCTCGAG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGCAGTTCTCACGCTCTCATCGCTCTCGTCGCCGCCTCCCCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50.0%; Score 26; DB 2; Length 117846; 70.0%; Pred. No. 8.1e+02; ive 0; Mismatches 15; Indels 0.
                                                                                                  1 81715: contig of 81715 bp in length 1716 8245: gap of unknown length 1746 98894: contig of 16149 bp in length 1895 99823: gap of unknown length 1895 99823: gap of unknown length 1720 107749: ontig of 6796 bp in length 1749 112805: contig of 5057 bp in length 1806 113834: gap of unknown length 18554: contig of 1720 bp in length 18554: contig of 1720 bp in length 18554: contig of unknown length 18554: location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5395 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone lib="Genome Systems 1" 25767 c 26372 g 28909 t
                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chromosome="8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="GS1-146A9"
                                                                                                                                                                                                                                                                                                                                                                                           1. .117846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35; Conservative
                                                                                                                             81716
82746
98895
99924
106720
107749
112886
115555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31403 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local
                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AP005635
                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (17-JUN-2000) Lita Annenberg Hazen Genome Sequencing
Center, Cold Spring Harbor Laboratory, 1 Bungtown Road, Cold Spring
Harbor, NY 11724, USA
On Jul 12, 2001 this sequence version replaced gi:14421582.
                                                                                                                                                                                                                                                                                                                                                                                    /translation="MGIPLPKPVMTQLQERYGNAIFRCGSNCVNGYRETMEDAHLTYL
TDSWGFFGVFDGHVNDQCSQYLERAWRSAIEKESIPMTDERMKELALRIDQEWNDSGR
EGGSTGTFFVALKEGNKVHLQVGNVGDSRVVACIDGVCVPLTEDHKPNNEGERQRIEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGRVENNRYDGSLAVSRAFGDREYKLGSGSOLEQKYJALADVQHKDFTFDSNDFYUL
CCOGVFGGRPREDVATYKQQLETCKNDLAEVKRKVEERA IERGSRDN SCMIYOPKD
GSDYAAEPHTTVYPGPFSAPRNSGFRKAYESKADKGWTTVGALLERRYDTLKAAEALT
PEETEELSQFENGPEAKLTGAERQKWFSNYFOKLCEAASNGFSDOMERLOSLOQOAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC073431
Homo sapiens chromosome 8 clone GS1-146A9, WORKING DRAFT SEQUENCE,
6 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

    (bases 1 to 117846)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       * NOTE: This is a 'working draft' sequence. It currently consists of 6 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2595;
                                                                                                                                                                                                    891. .2111
/function="serine/threonine phosphatase"
/fandard_name="PP2C"
/codon start=1
/evidence=experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 rerereacceretearcererectececececece 49
                                                                                                                                                                                                                                                                                                               /product="protein phosphatase-2C"
/protein_id="AAA02864.1"
/db_xref="GI:293068"
                                                     /organism="Leishmania donovani"
/organism="MHOW/BR/82/BA-2"
/sub species="Chagasi"
/db_xref="taxon:5661"
/dev_stage="promastigote"
/germline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 26; DB 3;
Pred. No. 1.1e+03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: mccombie@cshl.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50.0%; Scor. 76.2%; Pred. No. 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human Genomic Sequence, Chromosome 8
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 556 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www.cshl.org/genseq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center project name: GSI-146A9
Center clone name: GSI-146A9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC073431.10 GI:14702002
HTG; HTGS PHASE1; HTGS_DRAFT.
HOMO BADIENS (human)
HOMO SADIENS
            location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 687 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLSILLSLMGEQTQ"
797 c 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 117846)
McCombie, W.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match 50.0
Best Local Similarity 76.2
Matches 32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center code: CSHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       McCombie, W.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC073431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                 FEATURES
                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC073431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
```

ઠે g

AP005637

ઠે

```
Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Barna, N., Bastlen, V., Beda, F., Boguslavkiy, L., Anderson, S., Barna, N., Bastlen, V., Beda, F., Boguslavkiy, L., Anderson, S., Barna, N., Barthen, V., Body, C., Collymore, A., Cooke, P., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Lasz, J.S., Bodge, S., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand Pierre, N., Hagos, B., Heaford, A., Horton, L., Illev, I., Johnson, R., Lewine, R., Lieu, C., Liu, G., Macdonald, P., Marquis, N., McCarthy, M., McEwan, P., McKernan, K., McPhetters, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., Morrow, J., Murphy, T., Naylor, J., Norman, C. H., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T. M., Oliver, J., Peterson, K., Peterson, W., Peterson, R., Spencer, B., Stange-Thomann, N., Stojanovic, N., Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Zainoun, J., Limmer, A., and Zody, M.

Direct Submission.
                                                                                   AC084081 171665 bp DNA linear HTG 27-MAY-2001
Homo sapiens chromosome 8 clone RP11-89M8 map 8, WORKING DRAFT
SEQUENCE, 9 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (127-2000) Whitehead Institute/MIT Center for Genome Submitted (127-2000) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA ON MAY 27, 2001 this sequence version replaced gi:14196390.

All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

    (bases 1 to 171665)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. It currently consists of 9 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens chromosome 8, clone RP11-89M8
                                                                                                                                                                                                                          HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
Homo sapiens (human)
                                                                                                                                                                                                   AC084081.6 GI:14210547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 171665)
                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                            AC084081
                                                                                      LOCUS
DEFINITION
                                     RESULT 18
AC084081/c
                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Agrobiological Sciences, Rice Genome Research Figurations of 2-1-2, Taukuba, Ibaraki 305-8602, Japan 2-1-2, Taukuba, Ibaraki 305-8602, Japan 18-1298-384/6mias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-38-7461, Fax:181-298-38-7468)

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162208 bp DNA linear HTG 08-AUG-2002 Oryza sativa (japonica cultivar-group) chromosome 9 clone P0711A01,
                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF005637.1 GI:22138861
HTG, HTGS_PHASE2.
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Bukaryoca, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermacophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Ehrhartoideae, Oryzeae, Oryza.
                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone:P0711A01
Published Only in Database (2002)
2 (Bases I to 162208)
Sasaki, T., Matsumoto, T. and Katayose, Y.
Direct Submission
Submitted (07-AUG-2002) Takuji Sasaki, National Institute of
/organism="Oryza sativa (japonica cultivar-group)"
/mol type="genomic DNA"
/mol type="genomic DNA"
/do 'rollivar="taxon:39947"
/chromosome="9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sasaki,T., Matsumoto,T. and Katayose,Y.
Oryza sativa nipponbare(GA3) genomic DNA, chromosome 9, PAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/culfivar="Nipponbare"
/db xref="taxon:39947"
/chromosome="9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            by the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                    Length 149082;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 162208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139467 cecrécécricarecrecia de la 139508
                                                                                                                                                                      302 others
                                                                                                                                                                                                                                              / Match 50.0%; Score 26; DB 2; Length 149
Local Similarity 76.2%; Pred. No. 7.9e+02;
Ne. 32; Conservative 0; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                 8117 CGCTCGCGCTCTCCTCGCTGCTTCCCCGCCGTCCTCGCCCG 8158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10; Indels
                                                                                                                                                                                                                                                                                                                                                           9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 50.0%; Score 26; DB 2; I Best Local Similarity 76.2%; Pred. No. 7.9e+02; Matches 32; Conservative 0; Mismatches 10;
                                                                                                                                    /clone="P0646C08"
42056 a 31796 c 31369 g 43559 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46642 a 33101 c 33667 g 48396 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence will be replaced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="P0711A01"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AP005637
                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
```

FEATURES

ò a

COMMENT

```
Clone: Probabilished Only in Database (2002)

E 2 (bases 1 to 18736)

Sasaki, T., Matsumoto, T. and Katayose, Y.

Direct Submission

Submitted (12-JUN-2002) Takuji Sasaki, National Institute of

Agrobiological Sciences, Rice Genome Research Program; Kannondai

2-1-2, Tsukuba, Ibaraki 305-8602, Japan

E-mail: tsasaki@nias affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/,

Tel:81-298-38-7441, Pass.181-298-38-7468)

NOTE: It currently consists of 1 contigs. Gaps between the contigs

are represented as runs of N. The order of the pieces is believed

to be correct as given, however the sizes of the gaps between them

are based on estimates that have provided by the submitter. This

sequence will be replaced by the finished sequence as soon as it is

* NOTE: This is a "working draft' sequence.

* This sequence will be replaced

* This dequence will be replaced

* The accession number will be preserved.

* The accession number will be preserved.

* Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direction of the control of the cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 211291)
Birren, B.; Nusbaum, C. and Lander, E.
Homo sapiens chromosome 8, clone RP11-875011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC107959 211291 bp DNA linear PRI 28-OCT-2
Homo sapiens chromosome 8, clone RP11-875011, complete sequence.
AC107959
Sasaki,T., Matsumoto,T. and Katayose,Y.
Oryza sativa nipponbare(GA3) genomic DNA, chromosome 9, PAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/cultivar="Nipponbare"
/db xref="taxon:39947"
/chromosome="9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 187336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83156 CGCTCGCGCTCTCCTCGCTGCTTCCCCGCCGTCGTCGCCG 83197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9 CTCTCACGCTCTCATCGCTCTCGTCGCTCCCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 26; DB 2; Pred. No. 7.8e+02; 0; Mismatches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53235 a 38848 c 39766 g 55120 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="P0684H11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC107959.8 GI:24416019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 76.2%;
Matches 32; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 20
AC107959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
REFERENCE
AUTHORS
TITLE
                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oryza sativa (japonica cultivar-group) chromosome 9 clone P0684H11,
*** SEQUENCING IN PROGRESS ***.
AP005427.
AP065427.
HTG; HTGS PHASE2.
Oryza satīva (japonica cultivar-group)
Cyza satīva (japonica cultivar-group)
Cyza satīva (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta, Lillopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101182 ATGGAGTTCTCTGAACCTCTGCTGGCTCTGAGGCTGCCTGACTCTCGAG 101133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAG 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 171665;
                                                                                                                                                                                                                                       11185: gap of 100 bp
128659: contig of 1744 bp in length
128759: gap of 100 bp
168469: contig of 33710 bp in length
168569; gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              815 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15; Indels
                                           of 76888 bp in length
100 bp
                                                                                                                                                                                                                                                                                                                                        100 bp
of 7560 bp in length
                                                                                                                                                                                                                100 bp
of 8647 bp in length
                                                                                                                                                                                       of 8986 bp in length
                                                                                           of 8065 bp in length
of 439 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="RPCI-11 Human Male BAC"
1. .439
/note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50.0%; Score 26; DB 2; 70.0%; Pred. No. 7.8e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77528. .85592
/note="assembly_fragment"
8563. .9252
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40815 g 43970 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .171665
/organism="Homo mapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
/chTomosome="8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_fragment"
168570. .171665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly_fragment
                                                                                                                                           contig
gap of 1
contig
gap of 1
                                                contig
gap of
                                                                                              contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /map="0"
/clone="RP11-89M8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vector side:left"
540. .77427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone_end:T7
vector_side::
                      539:
                                                                       17527:
                                                                                              85592:
                                                                                                                          85692:
                                                                                                                                              93252:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4143B C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 70.0
Matches 35; Conservative
  440
77528
85593
85593
93253
102339
1111086
111186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44627 a
                                                                                                                                                                                                                                                                                                                                                                                        168570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AP005427
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
```

Gaps

.. 0

```
/clone=RP11-875011"
/clone lib="RPCI-11 Human Male BAC"
1.478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rpt_family="Alusx"
0389. .10470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rpt_family="LTR9"
3835. .1394^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="MER50"
5318. .154.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /rpt_family="MER50"
16172. .16240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /rpt_family="Alusa
complement (11384. .11622)
/rpt_family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /rpt_family="LTR36"
complement(13941. .14074)
/rpt_family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family="LTR7"
ement()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (8356. 8588)
/rpt family="MIR"
8980. 9999
                                                                                                                                                                                                                           complement (4201. .4492)
/rpt_family="AluSq"
4788. .4944
                                                                                                                                                                                                                                                              /rpt_family="MERSB"
complement(4965, .5066)
/rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="AluSp"
5397. .6A8E
                                                                                                                                                                                                                                                                                                                                                                                                                        7414. .7520
/rpt_family="MIR"
complement (7594. .7913)
/rpt_family="AluJb"
                                                                                                                                                                                                complement (3179. .3482)
/rpt_family="Aluy"
                                                                                                                                                                                                                                                                                                                                                 complement (5802. 6081)
/rpt family="AluJo"
complement (6089. 6395)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12392. .12625
/rpt_family="Tigger5"
complement(13156. .13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family="Tigger5"
                                                         family="MER74B"
                                                                                                                                                                                        family="L1MCa"
                                                                                                                                                                                                                                                                                                              rpt_family="AluJb"
421. .5719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .4721. .15170
rpt_family="LTR36"
:ompTement(15172. .)
                                                                                                                                                                                                                                                                                                                                       family="AluSx"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rpt_family="AluSq"
                                                                                              520. .856
'rpt_family="L1M4"
                                                                                                                         934. .1317
/rpt_family="L2"
1509. .1588
                                                                                                                                                           rpt_family="L2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_family=___...
complement(14539,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'rpt_family="Alu:
:omplement(14075
       chromosome="8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'rpt_f.
[2156.
                                                                                                                                                                                                                                                                                                                                    'rpt
                                                    repeat_region
                                                                            repeat_region
                                                                                                   repeat_region
                                                                                                                             repeat_region
                                                                                                                                                    repeat_region
                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                           repeat_region
                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                    Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Retta, R., Rieback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W.J., Young, G., Zainoun, J., Zambek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (28-OCT-2002) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA ON OCT 28, 2002 this sequence version replaced gi:23928501. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  http://ftp.genome.washington.edu/RM/RepeatMasker.html
------- Genome Center
Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism≈"Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="genomic_DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
```

```
/ procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Challor" | / procesin_id="Cha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DSYAQOTTLEAGYKEHISATIVABEHRKPASEPHYVPRAAKRYVIQABSETHIKTTEO
DSYAQOTTLEAGYKKEHISATVASHRKPASEPHYVPRAAKRYVIQABSETHIKTTEO
UGHLISSOIKKTTDVTSERLVHUKRPRASEPHYVPRAAKKISVPVIQABSETHIKTTEO
UGHLISSOIKTTDVTSERLVHUKRPRASPASEPHTSSOFPPSPOFPPSTADTSATAGSAIA
TLOKELSATSSAQKITKSVKAPTVRPARAEPTPSSOFPPSPOFPPSTADTVSGLKNMTVIE
KEVGVSITGSANREERLEAGYGLESSIDFOITFQSGIARLMIREAFAEDRGRFT
GSANNEAGTVSTSCTLAVQVSEEFKETTYNEKLTTPERRYPVSRVMTTTTTEEO
ANPGEPAAPFITKPVVQKLVEGESVYFCOIGGNEKRPVESSTADVVMTTTTTEEO
ANPGERAAFTTTTPVVQKLVEGESVYFCOIGGNEKPPVTSTATTTTEEO
ANPGERAAFTTTTPVVQKLYSTSYEKEYEKEGAIAKKAACHVNRTFVEDQEFLI
SPEERLIKEIEYRIIKTLEELEDGEEKMAVDISESEIERIKVRTLEG
MGYTFHCRASGYPLEAGYSSYEKEYRKOGAIAKNRTFKNPTLEG
MGYTFHCRASGYPLEAGYSTYRKFGRESAARLEGGESKANVURTFKOEDGFTI
AFASNIKGNAIGSSPLENGKRIKKGERSYQMDFLQDGRASLRIPNSPAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Agrobacterium tumefaciens str. C58 circular chromosome, section 93 of 254 of the complete sequence.
AE008035 AE007869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MSPARMSPGRRLEETDESQLERLYKPVFVLKPTSFKCLEGQSARFDLKVVGRPMPETF
WFHNGQQVVNDYTHKVVIKEDGTQSLIIVPATPSDSGEWTVVAQNRAGKSTISVILTV
EAVEHQVKPVFVEKLKNVNVKEGARLEMKVRATGNPNPDIVWLKNSDIIVPHKYPKII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IEGTKGQAALKIDSTVSQDSAWYTATAINKAGRDTTRCKVNVEVEFAEPEPERRLIIP
RGTYRAKEIAAPALEPLHLRYGGEQWEEGDLYDKEKQQKPFFKKKLSSLRLKRFGPAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNKYGTDHTSATLIVKDEKSLVEESQLPEGRKGLQRIEELERMAHEGALTGVTADOKE
KQKPDIVLYPEPVRVLEGETARFRCRVTGYPQPKLNMYLNGQLIRKSKRFRVRYDGIH
YLDIVDCKSYDTGEVKVTAENPEGVIEHKVKLEIQQREDFRSVLRRAPEPKPEFHIHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGKLQFEVQKVDRPVDTSETKEVVKLKRAERITHEKVSEESEELRSKFKRTEEGYYE
AITAVELKSRKKDESYEELLKKTKDELLHWTKELTAEEKKAL"
1402 c 1502 g 1236 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FECRLTPIGDPTMVVEWLHDGKPLEAANRLRMINEFGYCSLDYGVAYSRDSGVITCRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 10951)
Hinkle, G., Slater, S.C. and Goodner, B.
Complete Genome Sequence of Agrobacterium tumefaciens C58
(Rhizobium radiobacter C58), the Causative Agent of Crown Gall Disease in Plants
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Agrobacterium tumefaciens str. C58 (Cereon)
Agrobacterium tumefaciens str. C58 (Cereon)
Bacteria, Proteobacteria, Alphaproteobacteria, Rhizobiales,
Rhizobiaceae, Rhizobium/Agrobacterium group, Agrobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 49.2%; Score 25.6; DB 4; Length 6000; Best Local Similarity 77.5%; Pred. No. 1.4e+03; Matches 31; Conservative 0; Mismatches 9; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1502 g
                                                                                /codon_start=1
/product="titin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
2 (bases 1 to 10951)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AE008035/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (16-SEP-1998) S. Labeit, EMBL Heidelberg, Meyerhofstr. 1, 69117 Heidelberg, FRG
Related sequences U28657, D83390, X90568.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAM 08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gregorio, C.C., Trombitas, T., Kolmerer, B., Stier, G., Granzier, H., Kunke, K., Suzuki, K., Obermayr, F., Herrmann, B., Sorimachi, H. and Labeit, S.
The NH2 terminus of titin spans the Z-disc: its interaction with a novel 19-kD ligand (T-cap) is required for sarcomeric integrity J. Cell Biol. 143 (4), 1013-1027 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Y18102.1 GI:3928488
titin; titin gene.
Oryctolagus cuniculus
Oryctolagus cuniculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 211291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50.0%; Score 26; DB 9; Length 211
70.0%; Pred. No. 7.7e+02;
ive 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="soleus skeletal muscle"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .6000
/organism="Oryctolagus cuniculus"
/mol_type="mRNA"
/db_xref="taxon:9986"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6000 bp mRNA corrected conticulus mRNA for titin.
                                                                    /rpt_family="L2"

complement (16758. .17011)
/rpt_family="LTR37A"
17012. .17044
/rpt_family="T-ich"
complement (17045. .17191)
/rpt_family="T-Ich"
17545. .17338
/rpt_family="AluSx"
complement (18260. .18562)
/rpt_family="AluSx"
complement (18260. .18965)
/rpt_family="AluSx"
/rpt_family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (19696. .19835)
/rpt family="L1MD3"
complement (19829. .20084)
/rpt family="L1MC4a"
complement (20255. .20878)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rpt_family="MSTA"
complement(19349. 19654)
/rpt_family="AluSp"
19655. 19695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6000 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
rpt_family="LTR36"
6283. .16415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /dev_stage="adult"
1. .6000
/gene="titin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /rpt_family="MSTA"
complement(19696.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 6000)
Labeit, S.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /map="2q24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 70.0°
Matches 35, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9817758
                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                 repeat_region
                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OCU18102/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

```
/product="AGR_C 1917p"
/product="AGR_C 1917p"
/protein_id="AAR86658.1"
/db_xref="GI.15156074"
/translation="MEQAPTDILUASOTAUROASALAVOYSFSVIGALLLLIIGWLAA
/translation="MEQAPTDILUASOTAUROASALAVOYSFSVIGALLLLIIGWLAA
AFLORWAFQGISRIRGFDATLAGFFAGGIRYVVLILVIVWVLGOFGVOTASILAALGA
AGLAIGALOGATLOANIAAGIMLLURPFRVGEYIETSTVSGTI IEIGLFATELKTSDG
LYRLAAPUSTLAWVPITNYSFPSRRHELSLTVKNDEDMAAQDMLMTVVRSESRILLD
PAPVTFVDSVTADSATVKLEYWWRSDNYFVTTRDVTKAMRLAFDERKAEVNAQPA"
complement (6657. . 7175)
/gene="AGR_C 1940"
/gene="AGR_C 1940"
/note="AGR_C 1940"
/note="hypochetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="AGR C_1935p"
/protein_id="AGR C_1935p"
/protein_id="AGR C_1935p"
/db xref="G111515607.1"
/db xref="G111515607.1"
/db xref="G111515607.1"
/db xref="G111515607"
/db xre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (5758. .6579)

gene="AGR C 1937"

complement (5758. .6579)

/gene="AGR C 1937"

/gene="AGR C 1937"

/note="HYPOTHETICAL 30.9 KDA PROTEIN IN SBM-FBA INTERGENIC REGION (ORF 4)"

/codon start=1
/transl_table=11
                                                                                                                                                                         ALKMPPTILPSPIRVGQVIVQYWSPIWKNSLQTLYTTTLGFAIAVAAGLAIGLFIGWS
TYTYAGLYPLLISFPILVRYALVPLIUTUNFGIGTVBAVLTAFLISFPFIVVNVATGLA
TIEPFTEDVLAALGRANAIPVLIVNFGIGTSSLKIAITLAFVGSVVSETVASNY
GLGNPMSSAQSOFIGNKMDIMLKVGIPRSMPYFFGSIKIAITLAFVGSVVSETVASNY
GLGNPMSSAQSOFIGNVPLVFAGLLMLAVEGIAMYAVMAWLEKRMTGWAHRSTMGO"
(complement (1897. .5580)
//gene="AGR" C 1935". .5580)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="AGR_C_1940p"
/protein_id="AAK86859.1"
/brotein_id="AAK86859.1"
/brotein_id="AISIS6051"
/brotein_id="GI:15156075"
/translation="WICIVVSDF"
/translation="WICIVVSDF"
/translation="WICIVVSDF"
/translation="WICIVVSDF"
/translation="WICIVVSDF"
/translation="WICIVVSDF"
/translation="WICIVVSDF"
/#WICIVVSDF"
/#WICI
                 /protein_id="AAK86856.1"
/db_xref="GI:15156072"
/translation="MSAIMESSVAAEPRKPLIERVNWVKAAPWLYTLALFALWELLVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLDVEIADIAHGLARVARWNCGTRCDHAFTVAQHCLIVETIFCRMCPCATPDEWQMAL
LHDAPEYVIGDMISPFKSVVGGGYKTVEKRLEAAVHLRFGLPPHASRELKDRIKKADT
VAAFFEATELAGFSTAEAQKFFGLPRGITRDMFDIIPLPSTEAQRLFIARFEAIETLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             translation="MERAFIPGGRSGGSGGLRVAPAKSPRAWQRMLSGRRLDLLDPS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement (4897. .5580)
/gene="AGK C 1935"
/note="HYPOTHETICAL 28.9 KD PROTEIN IN AADK-SIGZ
/note="HYPOTHETICAL 28.9 KD PROTEIN IN AADK-SIGZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KD PROTEIN IN AHCY-HVRB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (7172. .7852)
/gene="AGR_C 1942"
complement (7172. .7852)
/gene="AGR_C 1942"
/note="HYPOTHETICAL_21.6 KI
INTERGENIC REGION (ORF5)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="AGR_C 1942p"
/protein_id="AAK86860.1"
/db_xref="G1:15156076"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Complement (7798. .8646)
/gene="AGR_C 1943"
complement (7798. .8646)
/gene="AGR_C_1943"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transT_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DGNVPFVLPLAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon start=1
/transI_table=11
/transI_table=11
/product="AGC"C_1928p"
/product="AGC"C_1928p"
/product="AGC"C_1928p"
/protein_id="AAK8685.1"
/db_xref="GI:15156069"
/transIation="MNSAGHHITMITRKVOANVDFYAGFLGLRLVKRTAGFEDAMO
LHLLYGDDIGSPGSLLTFLVWEDGGGVGYGGTLEISVAIDPAAIGFWLTRALKFGL
RAGF8DEFGAPVIRLENDFGLIVKLVGTHAFADATPHVTADISAEDAIGFWTRALKFGL
RAGF8DEFGAPVIRLENFORGIGGGRAFTRANDERDFSPGRATVD
RARANDELNTVLTGLKSLNSSTRANDHRYFHSLYVREDGGVLIERMITDAFGERTV
AFRAKDMELNTVLTGLKSLNSSTRANDHRYRFHSLYVREDFGVLIERMITDAFGERTV
AFRAKDHELETPPLEMHCABADVRVALDOFAMHGGERIVYRDLFFWTRFPDFSFDQKDIL
LEAARFAAFVEGAIRNYGLDRSKLRFIGHSNGANFYAAFAALYPELAGDALLYRPMPV
LETWROSDLSSRNFVLVAGERDKYRDGASELQGRLTASGARAEVTVEDGHELGLPDL
BAARRHLSDAS"
1948. . 2991
/gene="AGR_C_1930"
/gene="AGR_C_1930"
/note="MAGR_C_1930"
/note="MAGR_C_1930"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cransl_table=11
/producC="AGR_C 1930p"
/producL="AGR_C 1930p"
/producL="AGR_C 1930p"
/producl="AGR_G 1930p"
/dransl_table=11
/db_xref="GI:1515G070"
/dranslation="MILTRRLLSRTLAIAAIGAVAGFSLPATGAYAETPVKFTLDWKF
CGPAGFLLALDKOKTFKAEGLDVTIDSGNGSVEAIPRVATGAYQMGFGDINSVMKFLD
EDPSQKIKAVYMVYERPTFAVVYGRKSLGYTGDFKSLEGKKLGAPPPGAFAQWAPKD
VAGLDDSKIKAESIGFPWREPMLAKGDVDAVGFARSVULKNKKQGTADDDISTILMA
EHGLNLYGNAVLVNTDFAEKNPEPALAKGPVBAVGFARSVULKNKKQGTADDDISTILMA
SAIELERLENNANSMNIKTPYVVENGMGGVDPARLAASLDTLKVSMGLKGNVKAEQVFD
AAYLPPKEERMLP"
342. .4030
/gene="AGR_C 1932"
/gene="AGR_C 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl_table=11
/product="AGR_C_1932p"
/product="AGR_C_1932p"
/product="AGR_GESS.1"
/db_xref="G1:15156071"
/translation="MSHLVEIDSVDMRYGGSAGTLAVSGLNLAVDKGEFAAVVGPSGGGKSTLMKLYGTHIPQRRONVIVAGROVTEPVSIVGMRFQWRPTLRWFTLENILLPLE
IVEKHRRRLRAHKASYVAKAERLLEIVGLKGGSKYPWQLSGGMQQRANLCRALIHEP
ELLMLDREPGRALDAFTRRELMCVIRDHAAQRYTIILVTHDLRBATFLADKIFVMSAR
PGRVLAEHRVEFARPRQLDIMYDKGFNDMVQELHGEIAQARVAA"
                                                                                                                                                                                                                                                                                   1. .10951
/organism≈"Agrobacterium tumefaciens str. C58 (Cereon)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="AGR C 1933"
/note="probable permease of ABC transporter PA3512
(imported) - Pseudomonas aeruginosa (strain PAO1)"
Hinkle,G., Slater,S.C. and Goodner,B.

Direct Submission
Submitted (14-AUG-2001) Cereon Genomics, 45 Sidney Street,
Cambridge, MA 02139, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="AGR C 1928"
/note="(AP001514) BH2174
unknown conserved protein in B. subtilis"
                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type="genomic DNA"
/strain="C58"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:181661"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (97. .1656)
/gene="AGR_C 1928"
complement (97. .1656)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="AGR_C_1933p"
                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C_1933"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1/transT_table=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="AGR (
1027. ..4845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1027. .4845
                                                                                                                                                                                                                                                                                         source
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sas
                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
```

```
fransi table=11
/product = ABC transporter, substrate binding protein"
/product = ABC transporter, substrate binding protein"
/protein id="AAL42059.1"
/db xeef="G1:1739438"
/translation="WILTRRLLSRTTAIAAIGAVAGFSLPATGAYAETPVKFTLDWKF
EGPAGFLLALDKGYFKAEGLDVTIDSGNGSVEAIPRVATGAYQMGFGDINSVMKFLD
EDPSQNIKAVYMVYERRTFAVGRKELGVTODPKSLEGKKLGAPPPDGAFAQWAFTLD
EDPSQNIKIESIGFPVREPRTFAVGRKELGVTODPKSLEGKKLGAPPPDGAFAQWAFTLD
ENGLDDSKIKIESIGFPVREPRAVGFKELAKGPASVLINLKKQGIADDDISTILWA
EHGINLYGRAVLVNTDPAEKNPEAVKGFLKALAKGPASSVKTPEEGVAAVLKRNETLD
SAIELERLNYAANSWNIKTPVVVENGMGGVDPARLAASLDTLKVSMGLKGNVKAEQVFD
AAYLPPKEERMLP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="identified by sequence similarity; putative; ORF located using Blastx/Glimmer" / Godon start=1 / transI_table=11 / product="ABC transporter, membrane spanning protein" / product="ABC transporter, membrane spanning protein" / protein id="AAL42061.1" / protein id="MSAIMSSSVAAEPRKPLIERVNWVKAAPWLYTLALFALWELLVY ALKMPPTILDSPBIRGOVIVOYWSPPWKNSLQTLYTTLGFAIAVAAGLAIGLFIGWS KTIYAGLYPELILDSPBIRGFNAIPKVALVPILVIWFGIGTVPAVLAFELISFFPIVVNVATGLA
                                                                              Wood, D.W., Setubal, J.C., Kaul, R., Monks, D., Chen, L., Wood, G.E., Chen, Y., Wood, L., Kitajima, J.P., Okura, V.K., Almeida Jr., N.F., Stou, Y., Bovee Sr., D., Chapman, P., Clendenning, J., Deatherage, G., Gillet, W., Grant, C., Guenthner, D., Kutyavin, T., Levy, R., Li, M., MCClelland, E., Palmieri, A., Raymond, C., Rouse, G., Saenphimmachak, C., Wu, Z., Gordon, D., Eisen, J.A., Paulsen, I., Karp, P., Romero, P., Zhang, S., Yoo, H., Tao, Y., Biddle, P., Jung, M., Krespan, W., Perry, M., Gordon, C., Rouse, G., Biddle, P., Jung, M., Zhao, Z., Dolan, M., Tingey, S.V., Tomb, J., Gordon, M.P., Olson, M.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /trānslation="MSHLVEIDSVDMRYGGSAGTLAVSGLNLAVDKGEFAAVVGPSGCGKSTLMKLYTGLHIPDRGNTYAGRGVTEVVSICAMFONPTHLEWITLELILE
GKSTLMKLYTGLHIPDRGNTYAGRGVPEVSICAMFONPTHLEWITLELLELE
INEGHRRELAHKASYVAKKERLLEIVGLKGFGSKYPWOLSGGWOORANLCRALILE
ELMLDEPFGALDAFTREELWCVIRDLHAAQRVTIILVTHDLREATFLADKIFWMSAR
                                                                                                                                                                                                                                                                                                                                                                                  Submitted (27-SEP-2001) Department of Microbiology, University of Washington, 1959 NE Pacific Ave, Box 357242, Seattle, WA 98195-7242, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="identified by sequence similarity; putative; ORF located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transT_table=11
/product="ABC transporter, nucleotide binding/ATPase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Agrobacterium tumefaciens str. C58 (U Washington)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PGRVLAEHRVPFARPRQLDIMYDKGFNDMVQELHGEIAQARVAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AAL42060.1"
/db_xref="GI:17739439"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   db_xref="taxon:180835"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="genomic DNA"
/strain="C58"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   trans retain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="Atu1046"
177. .1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1471. .2259
/gene="Atul047"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2256. .3074
/gene="Atu1048"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Atu1046"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'gene="Atu1047"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2256. .3074
/gene="Atul048"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'codon start=l
'transī table=l
                                                          (bases 1 to 11764)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1220
                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rotein
                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
MEDLINE
PUBMED
                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                   E 1 (Gases I to III.6)

S Wood, D.W., Setubal, J.C., Kaul, R., Monks, D., Chen, L., Wood, G.E.,
Chen, Y., Woo, L., Kitajima, J.P., Okura, V.K., Almeida Jr., N.F.,
Zhou, Y., Woo, L., Chapman, P., Clendenning, J., Deatherage, G.
Zhou, Y., Bovee Sr., D., Chapman, P., Clendenning, J., Deatherage, G.
Gillet, W., Grant, C., Guenthner, D., Kutyavin, T., Levy, R., Li, M.,
McClelland, E., Palmieri, A., Raymond, C., Rouse, G.,
Saenphimmachak, C., Wu, Z., Gordon, D., Eisen, J.A., Paulsen, I.,
Karp, P., Romero, P., Zhang, S., Yoo, H., Tao, Y., Biddle, P., Jung, M.,
Krespan, W., Perry, M., Gordon, Eisen, J.A., Paulsen, I.,
Zhao, Z., Dolan, M., Tingey, S.V., Tomb, J., Gordon, M.P., Olson, M.V.
The genome of the natural genetic engineer Agrobacterium
tumefaciens CS8
L Science 294 (5550), 2317-2323 (2001)
                                                                        /produce="AGR_C 1943p"
/protein_id="AAK86861.1"
/db_xref="G1:15156077"
/db_xref="G1:15156077"
/translation="MSSAFLABRELIRVSGTGAEEFLNNLITADIENLPEGETRASAL_LTAPGARIALION="MSSAFLABRELIRVSGTGAEEFLNNLITADIENLPEGETRASAL_LTAPGARIALIPPLLIRAPVEGRAETVEGIGVFWGNSVTEAGVRDGRFAKAGVDLRRVPGASASGEAAAYEALRVEHGIAESGRDYALQDAFPHDVLMDVNDGVSFKKGCFVGQEVVSRMKHRGTARRRVVTVSADGTLPASGTEITAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                            GKPVGALGTVYGNRALAIVRTDRVADALAAGTPLLADNVAVSVALPAWSGLSFPAADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BCT 20-DEC-2001
note="hypothetical protein RP464 - Rickettsia prowazekii"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Agrobacterium tumefaciens strain C58 circular chromosome, section 95 of 256 of the complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Agrobacterium tumefaciens str. C58 (U. Mashington)
Agrobacterium tumefaciens str. C58 (U. Mashington)
Bacteria, Proteobacteria, Alphaproteobacteria, Rhizobiales,
Rhizobiaceae, Rhizobium/Agrobacterium group, Agrobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49.2%; Score 25.6; DB 1; Length 10951; 70.8%; Pred. No. 1.3e+03; ive 0; Mismatches 14; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6308 TGCAGACGGCCTCGATTCTCGCCGCCCTCGGCGCTGCCGGCCTCGCCA 6261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 TGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (9551. .9808)
gene="AGR_C_1947"
note="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transT_table=11
/producc="AGR_C_1947p"
/protein_id="AAK86863.1"
/db_xref="GI:15156079"
                                                          table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AE009069.1 GI:17739437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE009069/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

gene

CDS

gene

CDS

```
Cryza sativa nippondare(GA3) genomic DNA, chromosome 7, PAC clone: 90455F03

La (bases 1 to 106732)

S sasaki, T., Matsumoto, T. and Katayose, Y.

Direct Submission

Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan (E-mail: tsasaki@nias.affrc.go.jp, URL: http://rgp.dna.affrc.go.jp/, Tel: 81-298-38-7441, Fax:81-298-38-7468)

On Apr 11, 2003 this sequence version replaced gi:21624006.

The orientation of the sequence is from SP6 to T7 of the PAC clone.
                                                                                                             /trānslation="MSSAFLADRRLIRVSGTGAEEFLNNLITADIENLPEGETRASAL
LTPQGKILPDFLIRRDGRDYLVETGAAEQDALLRRLTMYKLAAPVELKAETVEGTGVF
WGNSVTEAGYDGRFRARGYDLRRYPGASASGEAAVFEALRVEHGIAESGRDYALQDA
FPHDVLMDVNDGVSFRKGCFVGDEVVSRMKHRGTARRKVTVSADGTLPASGTEITAN
GKFVGALGTVYGNRALAIVRTDRVADALAAGTPLLADNVAVSVALPAWSGLSFPAADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /transI_table=11
/product="conserved hypothetical protein"
/protei=|de="AAL42067.1"
/db_xrefi="GI:1739446"
/translation="MSCLSKGLLRSSALDSILLALTAGPIGLPEKAFALSELKPAQKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ESEPQAQNGEQPQQAQPAEPDEVEGDSDGIPLPDPLVDRSAGKANOOSAKPDTTPEMS
VVEBDISKAKDEPVRKLRGQIIDAAASGDIEKLRPFIVAGQNOFRIDGSDSEDPIAAL
KSYSGDPDGLEVLAI II DLLSTGYAHIDAGTPDEAVVEPYFAGKPLNTLTAPEKVELL
RIITAGDLADMQEYGNYSFYRIGISPDGKWKFFTAGD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLN 12-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oryza sativa (japonica cultivar-group) genomic DNA, chromosome 7, PAC clone:P0455F03, complete sequence.
                                                                                                                                                                                                                                                                                                                                                                                  /note="identified by sequence similarity; putative; ORF located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      49.2%; Score 25.6; DB 1; Length 11764; 70.8%; Pred. No. 1.3e+03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4490
           cleavage system T protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and Katayose, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oryza sativa (japonica cultivar-group)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
        /product="glycine cleavag
aminomethyltransferase"
/protein_id="AAL42066.1"
/db_xref="GI:17739445"
                                                                                                                                                                                                                                                                                                      /gene="Atul054"
complement(6998..7765)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="Atu1055"
complement (7780. .8037)
                                                                                                                                                                                                                                                                                complement (6998. .7765)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (7780. .8037)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106732 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                            gene="Atu1054"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Atu1055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AP005454.2 GI:29824104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sasaki, T., Matsumoto, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=]
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .106732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                              AARAED"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AP005454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AP005454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                /translation="MOKTLTRVTGALALGSMLVAAAAATAAGGDKPAAHSHNHGHDHS
QMTEAEKQIYKGYFEDAQVKRPPLTDWEGDWQSVYPYLLNGSLDSVWAEKAAHGDKTA
ARTAAYYEIGYKTDVNRIVIAPDSVTFYKEGKFTKGTYVSDGQEILTYKKGNRGVRYI
FKKTARGAAPAPQFIQFSDHTIAPKKAGHYHLYWGNDRKALMDEVTNWPTYYPFLMDGA
DIVEEMAAAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="conserved hypothetical protein"
/protein_id="AA142063.1"
/brotein_id="AA142063.1"
/brotein_id="AA142063.1"
/drotein_id="AA142063.1"
/drotein_id="AA142063.1"
/drotein_id="AA142063.1"
/drotein_id="AA142063.1"
/translation="MRQQATDILVASQTAVRQASALAVQYSFSVIGALLLIIGWLAA
AFLQRWAFQGISRIRGCPATLAGFFRGGIRYVVLILVIVWVLGGFGVQTASILLAALGA
AGAAIGLAGGTLGONIPAGIMILLVIRPRYGETETSVYGYGTIIIIGFATELKTSDG
LYRLAPNSTLANVPTITYSRFPSRRHELSLTYKNDEDWAAAQDMLMTVVRSESRILLD
PAPVTFVDSVTADSATVKLRYWVRSDNYFVTTRDVTKAMRLAFDERKAEVNAQPA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /protein id="AAL42064.1"
/db_xref="G1:17739443"
/db_xref="G1:17739443"
/translation="MTCIVV&PLSRIAEMAVKHKAREMVTLIAKEQSFHRPAVVAAER
HLTLAWNDIAFKGTGDLIAPDDAHVLKLIDFAGEWDGAPLLIHCWMGISRSPAAVI
AALSIYPDQOBTELAQRLRTVSPYVTPNSRIIAIGDRLLGREGRLVKAIKAIGRGADT
DGNVPFVLPLAG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xrefe="GI:17739444"-
/translation="WAPAKSPRAWORMLSGRRLDLLDPSPLDVEIADIAHGLARVARW
NGOTRGDHAFTVAQHCLIVETIFCRMCPGATPDEMQMALLHDAPEYVIGDMISPFKSV
VGGGYKTVEKRLEAAVHIRFGLPPHASRELKDRIFKADTVAAFFEATELAGFSTAEAQ
KFFGLPRGITRDMFDIIPLPSTEAQRLFIARFEAIETLRVTRTGGAV"
TIEPETEDVLRALGAKKADIMLKVGIPRSMPYFGSLKIAITLAFVGSVVSETVASNY
GLGNMMSSAQSQFNVPLVFAGLLMLAVEGIAMYAVMAWLEKRMTGWAHRSTMGQ"
complement (3126. .3809)
                                                                                                                              //dene="Atu1049"
//note="identified by sequence similarity; putative; ORF
//ocated using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Atu1050"
complement(1387. .4808)
/gene="Atu1050"
/note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement (4886. .5404)
/genew-Atu1051
/note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (5401. .6024)
/gene="Atul052"
/note="identified by sequence similarity; putative; ORF
located using Blastx/Glimmer"
/codon startal
/transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nuce="ldentitied by sequence similarity; putative; ORF
                                                                                                                                                                                                                                   /transl table=11
/product="conserved hypothetical protein"
/protein_id="AAL42062.1"
/db_xreff="G1:1773941"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon start=1
/transl_table=11
/product="conserved hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /producT="conserved hypothetical protein"
/protein_id="AAL42065.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="synonym: Atul053"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (4886. .5404)
/gene="Atu1051"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (5401. .6024)
/gene="Atu1052"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (3987. .4808)
                                                                                                          complement (3126. .3809)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (6027. .6875)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (6027. .6875)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="gcvT"
/note="identified by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
/transl_table=11
                                                                                    /gene="Atu1049"
                                                                                                                                                                                                                  /codon_start=]
/transl_table=
```

gene

Sas

gene

gene

CDS

8 ô

```
/clone="P0425F05"
                                                                               AP003569.1 GI:13936409
                                                                                                  HTG; HTGS PHASE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47386 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC114896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC114896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Assakin, was provided by the standard and an annual burder Submission

Ly Submitted (11-ARP-2001) Takuji Sasaki, National Institute of Agrobiological Resources, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 305-8602, Japan

E-mail:tasaski@abr.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:g1-298-38-7441, Fax:g1-298-38-7445

NOTE: It currently consists of 1 contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

• This sequence will be replaced

• This sequence will be replaced

• This sequence will be preserved.

• This sequence will be preserved.

• The finished sequence as soon as it is available and

• the accession number will be preserved.
                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                     HTG 21-MAR-2002
                                                                                                                                                                                                                                                                                                                                           Oryza sativa (japonica cultivar-group) chromosome 6 clone P0690H04,
                                                                                                                                                                                                                                                                                                                                                                                                            AP003513.1 GI:13603473
HTG; HTGS PHASE2.
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/cultivar="Nipponbare"
/db xrefa"taxon:39947"
/chromosome="6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAC
                                                                                                                                                                                                                  2; Length 139487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
0
                                                                                                                      Length 106732;
                                                                                                                                                         .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chromosome 6,
                                                                                                                                                                                                48
                                                                                                                                                                                                1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGCTCGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200 others
                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                         14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101198 CGCTCATGCTCTCATGCCGCTCGTCGCCGCCGCCGCCGCC 101159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sasaki,T., Matsumoto,T. and Yamamoto,K.
Oryza sativa nipponbare(GA3) genomic DNA,
clone:P0690H04
Dublished Only in Database (2001)
Chases 1 to 139487)
Sasaki,T., Matsumoto,T. and Yamamoto,K.
                                                                                                                  Score 25.6; DB 8;
Pred. No. 1.1e+03;
0; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 25.6; DB 2
Pred. No. 1e+03;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29970 g 39019
                                                                                                                                                                                                                                                                                                                                   139487 bp
/db_xref="taxon:39947"
/chromosome="7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ehrhartoideae; Oryzeae; Oryza.
                                /clone="P0455F03"
23692 c 22863 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'clone="P0690H04"
                                                                                                                Query Match
Best Local Similarity 70.8%;
Matches 34; Conservative C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 77.5%;
Matches 31; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30224 C
                                                                                                                                                                                                                                                                                                                                                                                            AP003513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                              RESULT 25
AP003513/c
                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 26
AP003569/c
                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
```

g ò

```
Tublished Only in Database (2001)

Sasaki, T., Matsumoto, T. and Yamamoto, K.
Direct Subnishin

Sasaki, T., Matsumoto, T. and Yamamoto, K.
Direct Subnishin

Submitted (02-MY-201) Takuji Sasaki, National Institute of
Submitted (02-MY-201) Takuji Sasaki, National Institute of
Submitted (02-MY-201) Takuji Sasaki, National Institute of
Agrobiological Resources, Rice Genome Research Program; Kannondai

2-1-2, Takuba, Ibaraki 305-8602, Japan

(E-mail: tesasakieabr. affrc. 90-19, URL: http://rgp.dna.affrc.go.jp/,
Tel: 81-298-38-7441, Fax: 81-298-38-7468)

NOTE: It currently consists of 1 contiges. Gaps between the contigs
are Papesented as runs of N. The order of the pieces is believed
are based on estimates that have provided by the submitter. This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

* This sequence will be replaced

* This sequence will be preserved.

* The finished sequence as soon as it is available and

* the accession number will be preserved.

* Location/Qualifiers

lice | 1. 164978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC114896.3 GI:20503086
HTG; HTGS PHASEZ.
Oryza satīva (japonica cultivar-group)
SWaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzae; Oryza.
El (bases I to 1844)
Swerion, Overton II.L., Bera,J., Tsitrin,T., Krol,M., Jarrahi,B., Xim,M., Overton II.L., Bera,J., Tsitrin,T., Krol,M., Jarrahi,B., Jin,S., Koo,H., Zisaman,V., Hsiao,J., Blunt,S., Vanaken,S., Utterbach,T., Feldblyum,T., Yang,Q., Haas,B., Suh,B., Peterson,J., Quackenbush,J., White,O., Salzberg,S. and Fraser,C.
HTG 21-MAR-2002
                       Oryza sativa (japonica cultivar-group) chromosome 6 clone P0425F05, *** SEQUENCING IN PROGRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTG 08-MAY-2002
                                                                                                                                                                                                                          Oryza satīva (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AC114896 118444 bp DNA linear HTG 08-MAY-2
Oryza sativa (japonica cultivar-group) chromosome 3 clone
OSJNBa0091B22, *** SEQUENCING IN PROGRESS ***, 5 ordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saeaki,T., Matsumoto,T. and Yamamoto,K.
Oryza sativa nipponbare(GA3) genomic DNA, chromosome 6,
clone:P0425F05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 164978;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     350 others
   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ch 49.2%; Score 25.6; DB 2; 1 Similarity 77.5%; Pred. No. 1e+03; 31; Conservative 0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34709 c 34874 g 47659 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Published Only in Database (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                     Ehrhartoideae; Oryzeae; Oryza
```

```
Unpublished
2 (bases 1 to 144077)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 68.6%;
Matches 35; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38290 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Buell, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 29
AC099041/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
 TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC136601.1 G1:22212952
HTG; HTGS PHASE2.
Oryza satīva (japonica cultivar-group)
SM Oryza satīva (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Nagnoliophyta; Liliopsida; Poales; Poaceae;
Enthartoideae; Oryzeae; Oryza.
Enthartoideae; Oryzeae; Oryza.
Enthartoideae; Oryzeae; Oryza.
S Chow, T.-Y., Haing, Y.-I.C., Chen, H.-C., Chen, H.-H., Liu, S.-M., Chen, Y.-L., Cheng, S.-J., Chen, H.-C., Chen, S.-K., Chen, T.-R., Chen, T.-R., Liu, Y.-F., Lin, Y.-F., Lin, Y.-F., Lin, Y.-F., Lin, Y.-C., Wu, S.-W., Wu, H.-C., Lin, Y.-F., Lin, Y.-F., Lin, Y.-C., Wu, S.-W., Yu, C.-Y., Yu, S.-W., Wu, H.-P., and Shaw, J.-F.
 sativa ssp. japonica cv. Nipponbare OSJNBa0091B22 BAC genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG 13-AUG-2002
                                                                                           9712
                                                                                                                                                                    9712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC130601 140556 bp DNA linear HTG 13-AUG-2
Oryza sativa (japonica cultivar-group) chromosome 5 clone
OSJNBb0108E17, *** SEQUENCING IN PROGRESS ***, 5 ordered pieces.
                                                                                                                                                         0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               113392 TGCAGCTCGCTCCTGTTGCTCACGCTGCAGCCGTTCTCGCTCTTG 113442
                                                                                      Submitted (13-MAR-2002) The Institute for Genomic Research, Medical Center Dr, Rockville, MD 20850, USA (bases 1 to 118444)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 118444;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 TGCAGTICTCTCACGCTCTCGTCGTCGCTGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         405 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match

48.8%; Score 25.4; DB 2;
Best Local Similarity 68.6%; Pred. No. 1.2e+03;
Matches 35; Conservative 0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note="japonica cultivar-group"
24821 c 25782 g 34752 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:39947"
/chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="OSJNBa0091B22"
                                          (bases 1 to 118444)
                                                                          Direct Submission
                                                                                                                                                  Direct Submission
                               Inpublished
                                                           3uell, R.
                                                                                                                                  Buell, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC130601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                          TITLE
JOURNAL
                                                                                                                   REFERENCE
AUTHORS
TITLE
                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 28
AC130601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
TITLE
                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
```

```
PRINTING

REPRESENT

PROPERTY

PROPE
```

```
ALB31802.4 GI:28892660

HTG; HTGS PHASE2; HTGS_ACTIVEFIN.

Oryza sativa (japonica cultivar-group)

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatcophyra; Magnoliophyta; Liliopsida; Poales; Poaceae;

Ehrhartoideae; Oryzae, Oryza.

I (bases I to 16864)

Segurens, N., Orjeda, G., Cattolico, L., Demange, N., Wincker, P.,

Segurens, B., Pelletier, E., Scarpelli, C., Salanoubat, M.,

Weissenbach, J. and Quetier, F.

Oryza sativa chromosome I2 sequencing
                                                                                                                                                                  The following sequence is oriented from the T7 to the SP6 end. IMPOYTANT: This sequence is unfinished and does not necessarly represent the correct sequence. Work on the sequence is in progress and the release of this data is based on the understanding that the sequence may change as work continue. The sequence may be contaminated with foreign sequence from E.coli, yeast, vector, phage, etc. . even if efforts are made to eliminate these contaminating sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168864 bp DNA linear HTG 07-MAR-2003 OSJNBA0083D13, *** SEQUENCING IN PROGRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (06-MAR-2003) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                            The mucleotide sequence of this BAC clone was generated by combining Syngente and Genoscope sequencing data.

* NOTE: This is a 'working draft' sequence. It currently consists of I contigs. Gaps between the contigs are represented as runs of N. The order of the pieces is believed to be correct as given, however the sizes of the gaps between them are based on estimates that have provided by the submittor.

* This sequence will be replaced

* by the finished sequence as soon as it is available and the accession number will be preserved.

* I 152159: contig of 152159 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110057 TGCAGCCCGCTCGCGTTCTTGTTGCTCTCGCCCGCAGCCGTTCTTGCTCTTG 110007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/cultivar="Nipponbare"
           On Mar 9, 2003 this sequence version replaced gi:28460535.
Center: Genoscope / Centre National de Sequencage
Center code: GS
Web site: http://www.genoscope.cns.fr/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 152359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.8%; Score 25.4; DB 2; Length 1 68.6%; Pred. No. 1.2e+03; ive 0; Mismatches 16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33464 g 41741 t
                                                                                                                          Contact: SegRef@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /sub_species="japonica"
/db_xref="taxon:39947"
/chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="OSJNBa0029K06"
/clone_lib="OSJNBa"
34046_c 33464_g 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - Web : www.genoscope.cns.fr)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 168864)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 68.6
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         43054 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 31
CNSOBCAF/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N AL731758
AL731758 GI:28892654
HTG; HTGS GI:288926564
HTG; HTGS GI:288926564
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Sukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poacea; Enhartoideae; Oryzae; Oryzae; Oryzae; Oryzae; Oryzae; Oryzae; Cattolico, L., Demange, N., Wincker, P., Segurens, B., Pelletier, E., Scarpelli, C., Salanoubat, M., Orzeda, J. and Quetier, F.
Oryza sativa chromosome 12 sequencing
AL Submission

AL Submitted (OB-MAY-2002) The Institute for Genomic Research, 9712

Medical Center Dr. Rockville, MD 20850, USA

On May 8, 2002 this sequence version replaced gi:20146765.

* NOTE: This is a 'working draft' sequence. It currently

* consists of 7 contigs. Gaps between the contigs

* are represented as runs of N. The order of the pieces

* is believed to be correct as given, however the sizes

* of the gaps between them are based on estimates that have

* provided by the submittor.

* This sequence will be replaced

* by the finished sequence as soon as it is available and

* the accession number will be preserved.

* 1 21285; contigs of 21285 bp in length

* 21386 58264: contigs of 18879 bp in length

* 58265 58364: gap of unknown length

* 71534 71633: gap of unknown length

* 71834 71839: contigs of 1217 bp in length

* 71851 73850: gap of unknown length

* 82967 83066: gap of unknown length

* 81867 118460: contigs of 35194 bp in length

* 118461 118560: gap of unknown length

* 118461 118560: gap of unknown length

* 118461 118560: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG 07-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (06-MAR-2003) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
- Web : www.genoscope.cns.fr)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135221 TGCAGCTCGCTCCTCTCTGTTGCTCACGCTGCAGCCGTTCTCGCTCTTG 135171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. 144077
/organism="Oryza sativa (japonica cultivar-group)"
/mol type="genomic DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CNSOBCB7
Oryza sativa (japonica cultivar-group) chromosome 12 clone OSJNBa0029K06, *** SEQUENCING IN PROGRESS ***.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48.8%; Score 25.4; DB 2; Length 144077;
68.6%; Pred. No. 1.2e+03;
tive 0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 TGCAGTICTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11 11856: contig of 35394 bp in length it 11856: gap of unknown length it 144077: contig of 25517 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="japonica cultivar-group"
31223 c 30860 g 40084 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="OSJNBa0036E17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:39947"
/chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 152359)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 68.6
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41309 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 30
CNS08C87/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
```

ö

```
/gene="SC4C6.12"
//note="SC4C6.12"
/note="SC4C6.22, possible copper oxidase, len: 343 aa;
/weakly similar to members of the multicopper oxidase
family e.g. to the N-terminus of SW:COPA_PSESM
(EMBL:M19308), CopA, Pseudomonas syringae copper
resistance protein A precursor (609 aa), fasta scores;
opt: 170 z-score: 1884 E(): 0.0036, 27.3% identity in 205
aa overlap. Also weakly similar to the blood coagulation
factors which are structurally related to the multicopper
oxidases. Similar to the N-terminus of TR:O53858
(EMBL:AL022004) Mycobacterium tuberculosis hypothetical
protein (504 aa) (52.1% identity in 323 aa overlap).
Contains PS00079 Multicopper oxidases signature 1 and
PS00080 Multicopper oxidases signature 2 (the latter
suggesting copper-binding)"
//transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            / Lanslations word property of the control of the c
                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (09-MAY-2002) Submitted on behalf of the Streptomyces Submitted (09-MAY-2002) Submitted on behalf of the Streptomyces sequencing Leam, Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CBIO 18A B-mail: sdb@sanger.ac.uk on or before Oct 29, 2002 this sequence version replaced gi:20520762, gi:20520779, gi:20520776, gi:20520777, gi:20520777, gi:205206774.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="SC66713"
/note="SC466.23, probable lacI-family transcriptional
/note="SC466.23, probable lacI-family transcriptional
regulator, laen: 352 as; sinilar to many e.g. TR:087590
(EMBL:AF066819), CelR, Thermomonospora fusca
transcriptional regulator of cellulase genes (340 aa),
fasta scores; opt: 991 z-score: 1119.2 E(1: 0, 51.9$
identity in 324 aa overlap. Similar to others from S.
coelicolor e.g. TR:086795 (EMBL:AL031317) S. coelicolor
putative transcriptional regulator (355 aa) (36.3$
                           Complete genome seguence of the model actinomycete Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="repeat 7; 23 bp imperfect inverted repeat"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note="PS00079 Multicopper oxidases signature 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note="PS00080 Multicopper oxidases signature 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Streptomyces coelicolor A3(2)"
/mol_type="genomic DNA"
/strain="A3(2)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="synonym: SC4C6.22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Bynonym: SC4C6.23"
1276. .2334
                                                                 coelicolor A3(2)
Nature 417 (6885), 141-147 (2002)
21996410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              db_xref="taxon:100226"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="SC06712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (276. .2334
/gene="SCO6713"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="SCO6712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  916. .951
/gene="SCO6712"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="SC06712"
                                                                                                                                                                                                                               2 (bases 1 to 292200)
Bentley, S.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58. .1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         521. .544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901. .963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                           JOURNAL
                                                                                                                                                                                                   PUBMED
                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                           The following sequence is oriented from the T7 to the SP6 end.

IMPORTANT: This sequence is unfinished and does not necessarly represent the correct sequence. Work on the sequence is in progress and the release of this data is based on the understanding that the sequence may be contaminated with foreign sequence from E.coli, yeast, vector, phage, etc. . even if efforts are made to eliminate these contaminating sequences.

The nucleotide sequence of this BAC clone was generated by combining Syngenta and Genoscope sequencing data.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bentley, S.D., Chater, K.F., Cerdeno-Tarraga, A.M., Challis, G.L., Thomson, N.R., James, K.D., Harris, D.E., Quail, M.A., Kieser, H., Harper, D., Bateman, A., Brown, S., Chandra, G., Chen, C.W., Collins, M., Cronin, A., Fraser, A., Globe, A., Hidalgo, J., Hornsby, T., Howarth, S., Huang, C.H., Kieser, T., Larke, L., Murphy, L., Oliver, K., O'Neil, S., Seeger, K., Saunders, M.A., Rutherford, K., Rutter, S., Seeger, K., Saunders, D., Sharp, S., Squares, S., Taylor, K., Warren, T., Wiezzorrek, A., Woodward, J., Barrell, B.G., Parkhill, J. and Hopwood, D.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BCT 11-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCO919129
292200 bp DNA linear BCT 11-FEB-Streptomyces coelicolor A3(2) complete genome; segment 26/29. AL939129 AL049485 AL049587 AL079355 AL138598 AL138667 AL138668 AL138977 AL353864 AL353870 AL356893 AL356812 AL645882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is believed to be correct as given, however the precess of the gaps between them are based on estimates that have provided by the submittor.
This sequence will be replaced by the finished sequence as soon as it is available and the accession number will be preserved.

1 168864: contig of 168864 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strepromýces coelicolor A3(2)
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .168884
/organism="Oryza sativa (japonica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7885 TGCAGCCGGTTCGTTGTTGTTGCTCTCGCCGCAGCCGTTCTTGCTCTTG 7835
On Mar 9, 2003 this sequence version replaced gi:28460587. Center: Genoscope / Centre National de Sequencage Center code: GS Web site: http://www.genoscope.cns.fr/ Contact: SeqRef@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contigs composition:
166717 bp contig from 1 to 166717
2097 bp contig from 166768 to 168864.
• NOTE: This is a "working draft" sequence. It currently
• consists of 1 contigs. Gaps between the contigs
• are represented as runs of N. The order of the pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48.8%; Score 25.4; DB 2; Length 168864; 68.6%; Pred. No. 1.2e+03; ive 0; Mismatches 16; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 TGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone_lib="OSJNBa"
45973 a 38589 c 38829 g 45421 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="genomic DNA"
/cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /sub_species="japonica"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /chromosome="12"
/clone="OSJNBa0083D13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Streptomyces coelicolor A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:24418971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 68.6
Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL939129.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SC0939129/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
         COMMENT
```

```
Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 33
AE005738/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /noce="SG466.24c, possible hydroxylase, len: 263 aa; similar to TR.055078 [EMBL:U50973] Streptomyces sp. strain C5 daunomycin c-14 hydroxylase (275 aa), fasta scores; opt: 422 z-score: 482.3 E(): 1.5e-19, 38.54 identity in 273 aa overlap. Similar to TR:050527 [EMBL:AL009204] S.coelicolor hypothetical protein (267 aa) (37.94 identity in 253 aa overlap) and to (EMBL:AL049863), SC5H1.09c, S.coelicolor possible hydroxylase (265 aa) (35.74 identity in 258 aa overlap). Also similar to hypothetical proteins from Mycobacterium tuberculosis and to Mycobacterium tuberculosis and to Mycobacterium tuberculosis and to Mycobacterium (EMBL:AL0007737) (260 aa) (36.74 identity in 264 aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
/producE="putative hydroxylase"
/producE="putative hydroxylase"
/producE="putative hydroxylase"
/protein_id="(AB45588.1"
/db_xref="G1:5139570"
/translation="MLTTRPYGAPNALDVGTSDLDGATSFYGGLFGWRFRSAGPEAG
GYAFFELDGRIVAGMGTREQGPSWTVYPQAPDRAAAAQASGEAHGGVLVQPMDVM
DQGTWAILAARAGLPFGIWQPGQRAGLDVTGESGALCWVELHTADIAAAAYYRAVLG
LETSGVSFPGGSYTCVNPAGEGEDAMFGGLVPLAEDPADTDADAGWLPYFAVDDADTA
VARTTELGGTVRWPATDIEGVGRVARLADPYGARFAVLRPAPRQG"
complement (3239. .3344)
/note="possible RBS"
                                                                                                                                                                         /codon_start=1
/transl_table=11
/product="putative transcriptional regulator"
/product="putative transcriptional regulator"
/protein_id="CAS45587.1"
/db_xref="G1:5139569"
/db_xref="G1:5139569"
/translation="MTETGRPTLEAVAERAGUSRATVSRVVNGAHGVRDALAERVRR
/veEnGXVPNHAARSLYRRHQAVAVVAAEPETRVFADPYFAQQLRGISKELTAHDNO
LVLLUTEGREDHARVGRYLAGGHVDGALVESLHLHDPLPGLVRSAGVPTVFGGRPDWD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81 aa, similar to many transcriptional regulators (some putative) from Streptomyces e.g. TR:053963 (EMBL:X62287), WhiB, S.coelicolor transcriptional regulator essential for sporulation (87 aa), fasta scores; opt: 336 z-score: 452.7 E(): 5.7e-18, 61.1% identity in 72 aa overlap. Also similar to e.g. TR:069649 (EMBL:AL02212) Mycobacterium tuberculosis putative regulatory protein (100 aa) (40.0%
                                                                                                                                                                                                                                                                                                                                                                                                                     DGRDDVVYVDSDNRGGARSAVHHLAGLGRTRIAHITGPLDQTSAADRLAGFRDVVRFGA
GGELVARGPFISGGGRRAMRELLDRCPGLDAVPAANDLTAAGALRVLRRGRRVPDDV
AVVGFDDMLPVAEQTPDPLTTVRQDIEGMGRLMARLLLRGLDRRAADATDFDAARTPT
AAPPGVVLPTLVHRSTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note="SC4C6.25, probable transcriptional regulator, len:
identity in 342 aa overlap). Contains Pfam matches to entry PF00532 Peripla BP_like, Periplasmic binding proceins and LacI family and to entry PF00356 lacI, Bacterial regulatory proteins, lacI family. Contains probable helix-turn-helix motif at aa 9-30 (Score 2307, +7.04 SD)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Pfam match to entry PF00356 lac1, Bacterial regulatory proteins, lacI family, score 39.70, E-value
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /notes"Pfam match to entry PF00532 Peripla BP like, Periplasmic binding proteins and LacI family., score 95.60, E-value 9.5e-25. 
//notes"repeat 7, 23 bp imperfect inverted repeat."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="SCO6714"
/note="synonym: SC4C6.24c"
complement(2440. .3231)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="SCO6715"
/note="Bynonym: SC4C6.25"
3425. .3670
/gene="SCO6715"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="SC06713"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1465. .2202
/gene="SCO6713"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="SC06714"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1291. .1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  overlap) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.4e-10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGS
```

```
/note="SC4C6.26, hypothetical protein, len: 64 aa; unknown function, probable CDS suggested by positional base preference, GC frame plot and amino acid composition" /codon start=1 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_table=11
/product="hypothetical protein"
/protein_id="cAB45590.1"
/db_xref="GI:513572"
/translation="MCRAAGGVAAALLTEAAAEPLAVTGALGECEDRPAPWRELPRAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BCT 12-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria, Proteobacteria, Apphaproteobacteria, Caulobacterales, Caulobacteraceae, Caulobacter.

1 (Bases I to 10037)

Nierman, W.C., Feldblyum, T.V., Laub, M.T., Paulsen, I.T., Nelson, K.E., Bisen, J., Heidelberg, J.F., Alley, M.R., Ohta, N., Maddock, J.R., Potocka, I., Nelson, W.C., Newton, A., Stephens, C., Phadke, N.D., Bly, B., DeBoy, R.T., Dodson, R.J., Durkin, A.S., Gwinn, M.L., Shetty, J.F., Kolonay, J.F., Smit, J., Craven, M.B., Khouri, H., Shetty, J., Berry, K., Utterback, T., Tran, K., Wolf, A., Vamathevan, J., Ernoleva, M., White, O., Salzberg, S.L., Venter, J.C., Shapiro, L. and
                                                                                                                                                                                       /trānslation="MHTETTAAPDLSWQEEALCAQTGGDFFFPEPGSSVRDAKRICAL
CPIRSTCLEFALSNDERFGVWGGLSEKERLALRRTIP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 10037)
Nierman, W.C., Feldblyum, T.V., Paulsen, I.T., Nelson, K.E., Eisen, J.,
Heidelberg, J.F., Alley, M.R.K., Ohta, N., Maddock, J.R., Potocka, I.,
Nelson, W.C., Newton, A., Stephens, C., Phadke, N.D., Ely, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="SC4C6.27c, probable acyl-(acyl-carrier protein) desaturase, len: 328 aa; similar to many e.g. SW:STAD LINUS (EMBL:X70962) Linum usitatissimum stearoyl-ACP desaturase (136 aa), fasta scores; opt: 385 z-score: 46.15 E(): 2.2e-18, 30.2% identity in 311 aa overlap. The N-terminal 100 aa are divergent. Highest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AE005738 10-JUN 10037 bp DNA linear BCT 12-JUN Caulobacter crescentus CB15 section 64 of 359 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          279401 ATGCGGTACGCCAACGCGGCCGCCCTCGTCGCCTCTCCGCTTT 279351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48.8%; Score 25.4; DB 1; Length 292200; 68.6%; Pred. No. 1.1e+03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGCAGTTCTCTCACGCTCTCATCGCTCTCGTCGCTGCCGGCCTCGCCAGT 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Complete genome sequence of Caulobacter crescentus
Proc. Natl. Acad. Sci. U.S.A. 98 (7), 4136-4141 (2001)
21173698
                                                                                          /product="putative transcriptional regulator"
/protein_id="CAB45589.1"
/db_xref="G1:5119571"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
aa overlap)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="synonym: SC4C6.27c"
complement(4242. .5228)
                                                                                                                                                                                                                                                                                                                      /note="synonym: SC4C6.26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (4242. .5228)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RRHPAPGVRGAAPGEITAHE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Caulobacter crescentus CB15
Caulobacter crescentus CB15
                                                        table=11
                                                                                                                                                                                                                                                                                                                                                    4003. .4197
/gene="SCO6716"
                                                                                                                                                                                                                                                   4003. .4197
/gene="SCO6716"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="SCO6717"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="SCO6717"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE005738.1 GI:13421828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AE005738 AE005673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fraser, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35;
```

FEATURES

```
/codon start=1
/trans] table=11
/produc==12Cc3, transposase OrfB"
/protein id="AAK22609.1"
/protein id="AAK22609.1"
/db_xref="G1:13421833"
/translation="MRYPACEKIEITRLVEGSTLPVRRTLAQIGVPRATFYRWYDLYO
TGGPEALEDRPARPSTWWNN PEDVRAALEMALEHSELSPRETANRFTDSGYPYSE
TGGPEALEDRPARPSTWAAFTDKTTAPNOWWQTDFTYFKIIGWGWYLLSTI
LDDFSRYVIAWKLCTTWKAGDVTDTLELALSASGCOQVSVRHKRPLLSDNGSSYTSGE
LADWLGKQEMKHCTAMKAGDVTDTLELALSASGCOQVSVRHKRPLLSDNGSSYTSGE
LADWLGKQEMKHRAPHSQTGGKIERWHGTLKNRILLENYFLPGDLEAQIGAFIEH
VNHARYHSSLENVTPADAYFGRAADILRRRASVKRQTLEHRRLQHRKIAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IQTEPPALEAVREQAATOGKAFAVIANEAHSSOTGEAGGKLKOMLSDAEIAELDGGE

IDEFTOLIAMAGRAASDKSITYVAFTAFRAKTLOLFGRPDADGLAPFHYYSMROA

IIEGEILDULKMYTPYSIAFAKLANDOGBWDEREVERDTALKGIMRWYRLHPYNIAGKY

QIVVEHYRENVOPLLDCKAKAMYVLGSRQEATRWSVAINAYTRXWGYPLGTLVAFSGE

WNDDELGAVSETSAALNPGLNGRDIRDAFKAENFHFLLVANKFQTGFDOPLLCGMYVD

RYBLAGIQAVOTLSKLNRAHPCKOTTY YLDFCNSRAEDLLAFRTYYETFAELBAATOPNL

IYDLARKLDAAGHYDDHEIREWYWELDPKAKQGDIJAALEBAATOPNL

YTAKAQDDERRAABEALDHMALDLFKGDMAAFQRLYSFIRSQIFDYGNTEIEKRSIFFR
                                                                                                                                                                                                                                                                                                                           /trānslation="MSLHKEIRFEDEICAHLAANGWLYDGAAGDRHDRTRALYVEDLV
WYQDSQPEARMDGLSRANGAAAQVLADRYRKELDERGVLDVLRNGVELVGARGRIQM
AQFKRAMGNNPEIVRYEANRLRVARQVKYANGNENCLDLVLYLNGLEVATAELKSDF
TQSVEDAINQYRFDREPRPKGGREEPLLAFPGGALVHPAVSNSEVAMTTKLQGRDTFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                  LPFNKGDHGGKGNPLNPNGHRTAYLWEEIWARDSWLEILGRYWTKRDAKKRITSVVF
PRYHQLDATRKLAAQVLAEGAGGKFLIQHSAGSGKTNSIAWSAHILSELHDAADNKLF
SSVIVVSDRNVIDTQLQEALFDFQRTAGVVATIKSESGSKSGQLAEALAAGKKVIVCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RLLPLLEFGRERPGVDLSGLRLTHHALKTKGQQDLLYGTGEAPKLSGMAEVGSGGLHE
KEKARLDEITAKLNDLFEGEITEENCTSSEVLRQPGCGFSGGLASSGFDI"
complement (7350. .8330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="ISCc3, transposase OrfA"
/protein id="AAK22610.1"
/brotein id="AAK22610.1"
/db_xref="G1:13421834"
/translation="MRPKPLAAKATPGERVVKDIRRATRRHFSÄEDKIRILLDGLRGE
DSIABLCRKEGIAOGLYYWBKEFMEAGKRRLAGDTARAATTDEVKDLRRESTALKEV
VAEQALEIRLLKKSMIADGGDGE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tränslation="MADRKPGDSVMIMNETPPDTIVFIGDHDPSLWDLPWINRAEVAP
AGEGRDBERLVKLWFRRGENNELVSSALPPLPDRPHDLVAYNYGEGAPQVFWHTLRVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="CC0625"

Note="identified by match to protein family HMM"
/codon start=1
/transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="identified by match to protein family HMM"
                                                                                                                                                                                                                              /producT="conserved hypothetical protein"
/protein id="AAK22608.1"
/db xref="GI:13421832"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="identified by Glimmer2; putative"
                                                                                                                                        by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transI_table=11
/product="hypothetical protein"
/protein_id="AAK22611.1"
/db_xref="GI:13421835"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (7350. .8330)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (8327. .8704)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (8327. .8704)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (8745. .9119)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EAYRIDFDCPPSAPMRQIEGSV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (8745. .9119)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (9136. .9471)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (9136. .9471)
                                                                                                                                        note="identified
                                                                                                                                                                                                          table=11
                                           'gene="CC0623"
                                                                                                                                                                     codon start=1
                                                                                                /gene="CC0623"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="CC0624"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="CC0625"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transI_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="CC0626"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="CC0626"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="CC0627"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="CC0624
             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Subunit, putative"

/protein id="Aak22605.1"
/db_xref="G1:13421829"
/tb_xref="G1:13421829"
/tc_anslation="MMHOSDEAFINSVADLLRGDYKQSDYGKVILPFTVLRRLDCVLE
/tc_anslatekraAGCVDPEPELRRVSGAGFYNTHGMDLTRVLGDADNVAANLYAYL
OAFSPAVRDIFERFEFHAQIERLAKAGLLYMVAEKFTRIDLHPEAVDHHQMGLVFEEL
IRKFAELSNETAGEHFTPREVIRLMVELIFVEDDAALSEPGVVRTIYDPTAGTGGMLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VAEERLLQQNPGAKLSMYGQELNPESYAICKADMLIKGQPVDNIYCGYTLSDGGHAA

PRDYMLSNPPEVDWKYVEKIYVRAEGOGYNGRFGFGLPRVSDGSLLFLLHLLSKMR

PRADDGGSRFGTVLNGSPLFYGGAGGGESEIRRHLLESDLVBAIVALFTDHTLSKMR

PVWIVSNKKPAARRGKLQLIDASGFWRWRKSLGSKRKEMGEDDIAAITRLFGAFVDA

VVWIVSNKKPAARRGKLQLIDASGFWRWRKSLGSKRKEMGEDDIAAITRLFGAFVDA

VVDEASKPVLGGKGVRVYCKPABAPARPTENVPLSEDVETYFAREVLPHAPDAWIDADK

TKTGYEIPFNRHFYVFEPPRDLAQIDADLRAVTDGIKAMIAELAA"

10066 3408

2066 3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DAWSTWELPAPSLAEQQAIAAFLDRETAKIDALVEAQERLIALLKEKRQAVISHAVTK
CLDPSAQMKDSGVEWLCQMPAHWEVVPAKNLADSIKAGPFGSALTKDMYSSAGYRVYG
GOOVIPGDFTGDYVTSDRYNELSQYRVEVGDLLVSCVGFTGKIALFPGABEGIIN
PRLIRFRPNNOVDPFYTCVLLAESAVSFEQFSYLSRGTMDVINIGILGEIVVPPPPN
EQISIAGYLAEVQEOFDSLSAASEAAITLLQERRAALISAAVTGKIDVRGLVQTAEAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /crānslation="MTRLWIVRAGRHGERELEAITQGRLLPGFGEVADLTGLKDREAI
LRVLAATYPEGANTLRNFRAQMNQFVYTIGYGBLVVLERKYTSGVNIGRYREPSRHD
PAPATAHTRAVEWILBAVPREAPAODLRHSFGAFLTICEVKRNEALARVEAVLKTGKD
PGPLLGKQGVVTVKAPVEDAEAEDVELDVEDIARQQITALIKSAFAGHBLAYLVAEIL
REGYTKVSSPPGPDGGVDILAAGGRLGLGEDRICVQVKSCDAPANGEVVLKLMGSVQ
ARKRTGLLVSIAGVNGPAQKLIDSEFFSVRLWQMPELLTALFASYGQLSDETRAKIP
LKGTWARGAVDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="mSFPAYESYKESGVEWLGRVPSHWNFRPLKHLVIMRSGGTPSKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REDYWGGEI PWASAKDLKVDTLTDTQDHLTAEALDEGAAQLLPANAVVVLVRGMMLAR
TFPVCRLSRPMTINQDLKGLIANRGVDPNYLAWSLRASEVETLCRLDEAGHGTKALRM
Laub, M.T., DeBoy, R.T., Dodson, R.J., Durkin, A.S., Gwinn, M.L., Haft, D.H., Kolonay, J.F., Smit, J., Craven, M., Khouri, H., Shetty, J., Berry, K., Utcerback, T., Tran, K., Wolf, A., Vamathevan, J., Ermolaeva, M., White, O., Salzberg, S.L., Shapiro, L., Venter, J.C. and
                                                                                                                                                                                                Genomic Research, 9712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="CC6621"
/note="identified by match to protein family HMM"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="identified by match to protein family HMM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon start=1
/transI_table=11
/product="type I restriction-modification system,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="type I restriction-modification system,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /noce="identified by Glimmer2; putative"
/codon start=1
/transl_table=1!
/product="hypothetical protein"
/protein id="AARX2607.1"
/db_xref="Gl:13421831"

    .10037
/organism="Caulobacter crescentus CBIS"
/mol_type="genomic DNA"
/strain="CBIS"

                                                                                                      Ermorac...
Fraser.C.M.
Proprect Submission
Submitted (31-JAN-2001) The Institute for Gerbenitted (31-JAN-2001) The Institute for Gerbenited Center Dr. Rockville, MD 20850, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="AAK22606.1"
/db_xref="GI:13421830"
                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:190650"
224. .2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'gene="CC0620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3405. .4448
/gene="CC0622"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 224. .2059
/gene="CC0620"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3405. .4448
/gene="CC0622"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Katayose, Y., Watsumoto, T., Yamamoto, K., Sakata, K., Baba, T., Katayose, Y., Wu, J., Niimura, Y., Cheng, Z., Nagamura, Y., Antonio, B.A., Kanamori, H., Hosokawa, S., Masukawa, M., Arikawa, K., Antonio, B.A., Kanamori, H., Hosokawa, S., Masukawa, M., Arikawa, K., Hamada, M., Harada, C., Hijishita, S., Honda, M., Ichikawa, Y., Idohuma, A., Iijina, M., Ikeda, M., Ikeno, M., Ichikawa, Y., Itoh, Y., Itoh, Y., Itoh, Y., Itoh, Y., Inabuchi, A., Kamiya, K., Karasawa, W., Katagiri, S., Kikuta, A., Kobayashi, T., Machita, K., Machara, T., Mizuno, H., Mizubayashi, T., Mukai, Y., Nagasaki, H., Nakashima, M., Ohta, I., Ono, N., Saji, S., Sakai, K., Shibata, M., Shimokawa, T., Shomura, A., Song, J., Takazaki, Y., Terasawa, K., Tsuji, K., Waki, K., Yanagata, H., Yamane, H., Yoshiki, S., Yoshihara, R., Yukawa, K., Zhong, H., Iwama, H., Endo, T., Ito, H., Hahn, J. H., Kim, H. I., Eun, M. Y., Yano, M., Jiang, J. and Gojobori, T., Ito, H., Hahn, J. H., Kim, H. I., Eun, M. Y., Nature 420 (6913), 312-316 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141983 bp DNA linear PLN 29-MAR-2003 PAC clone:PO666G04.
AP003047 BA000010
                         /codon gtart=1
/transf_trable=11
/product="hypothetical protein"
/protein id="AAK22612.1"
/bx xxef="GI:13421836"
/translation="WGLGMSANAAPSARYPTSKWPVRADLITLRVCADLDWRVTVRCPHCGTARQLFGPELAARKLADVPLYKLFERGAFKCRKAQYGCNGVPASEISVDAMDVGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (13-DEC-2000) Takuji Sasaki, National Institute of Agrobiological Sciences, Rice Genome Research Program; Kannondai 2-1-2, Tsukuba, Ibaraki 18629.602, Japan (E-mail:Itsasaki@nias.affrc.go.jp, URL:http://rgp.dna.affrc.go.jp/, Tel:81-298-18-7468) on Feb 23, 2001 this sequence version replaced gi:11862977. Genes were predicted from the integrated results of the following: (October 1998 version). The genomic sequence was searched against (October 1998 version). The genomic sequence was searched against (Ftp://ncbi.nlm.nih.gov/blast/db) and the cDNA sequence database at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae;
Ehrhartoideae, Oryzeae, Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 10037;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Indels
'note="identified by Glimmer2; putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 25.2; DB 1;
Pred. No. 1.7e+03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 141983)
Sasaki,T., Matsumoto,T. and Yamamoto,K.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1311 TCGCTCTCGCCGCTGCCGGCCCCGCCGTG 1282
                                                                                                                                                                                                                                                                                                                                                                         3142 g 1726 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23 TCGCTCTCGTCGCTGCCGCCTCGCCAGTG 52
                                                                                                                                                                                                                                   Complement (9893. .9969)
/gene="tRNA-Arg-4"
/gene="tRNA-Arg-4"
/product="tRNA-Arg-4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.5%;
                                                                                                                                                                                                                LONVACWSR"
                                                                                                                                                                                                                                                                                                                                                                           3295 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                                                                           1874 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12447438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 34
AP003047/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHOF.S
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                CRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
```

g ઠે

```
RGP. Frotein homologies of the coding regions were searched against NCBI NonRedundant Protein database with BLASTP2.0. ESTS represent the identified cDNA sequences using BLASTP2.0. with the corresponding DDBJ accession no. and RGP clone ID.

A gene with identity or significant homology to a protein is classified based on the protein name to indicate the homology level such as same name, 'putative' and '-like protein. A gene without significant homology to any protein but with EST homology (covering almost the entire length of partial sequence) is classified as an 'unknown' protein. A gene predicted with a gene prediction program is classified as a 'hypothetical' protein.

The sequence of Foofs6GGQ4 clone has an overlap with OJ1174_DD5 (DDBJ: AP003118) clone at the position 10,0138 of 5, end. The sequence of Foofs6GQ4 clone has an overlap with PQ489AD1 (DDBJ: AP002484) clone at the position 58,198 of OJ1174_DD5 end. The sequence of this clone at the position 19,689 to 141,983 of 3, end. The sequence of this clone ends at the position 19,295 of PQ489AD1. Detailed information on overlap and assembly quality together with annotation of this entry is available at http://rgp.da.affer.go.jp/GenomeSeq.html.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /trānslation="MOPRRRQQQQSILSFLOKKPAAAAGEEGATPERPPRAASVA
GIMERLUVRPPRQQQGRDQDASQARHVEQBALPVKNQTTSNECSSALFLESCNAGDNK
AAMLIAEEGSNMTPLQEPLKSLWPSKDFVBASTLSPELGLYONLPPHCPKKLPFESS
NNNCIGANSSFEEFDVQTPQDTSKTVFWRSSRGADTPLTESDSDQTPLQHPSKFSFVS
PNGEYVRGATLFALDSNYTPRRESSSEKLSSGPSDLPYIKATKLFTEFDSNGTPSQNHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KKLSSVPKNDKRIGAGAELFSEFDPSPLKPETPVMRAVIPRLKRVQEDQRVTTNDSCS
PFWGPNKKVRPQCSPVENKVHDEMAESARSKFEWLNPSNIRDANRRRLADPLYDKT
LEIPPDALRRMSTSQKQYMNIKCKYMDYVLFFKVGKFYELYEVDAEIOQKELDMKMTI
SGVGKCRQIIEVMREGILFVPTRDAHNNIGHQDLNLDGYKVGRIEQMESADQAKSR
GSNSVILRKLVHVSFSTVGDSNIGADAVHLLSLKEITLASNGSRYVGFAFLDYAALK
IWVGSVHDDDTFAALGALLVQVSPKEIIYFTSGLSKETHRLIKKYASAGSVKMQLTPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (join(13539. .14009,14482. .14609,15099. .15240, 15289. .15675,15815. .16000,16152. .16429,16527. .16653, 17016. .17212,17380. .17427,17504. .17537,17607. .17735, 18535. .18730,19189. .19255,19524. .19618,20292. .20387, 20897. .21992,22991. .23172))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Oryza sativa (japonica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/product="putative DNA mismatch repair gene"
/protein="BAB32900.1"
/db_xref="GI:13122419"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="putative glycin-rich protein"
/protein_id="BAB32899.1"
/db_xref="GI:13122418"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="P066604.1"
complement(10870. .12330)
/gene="P066604.1"
/codon start-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /mol_type="genomic DNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /chromosome="1"
/clone="P0666G04"
complement(10870.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . .141983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
```

ö

```
PAVYQALERHLPPDLAGAPAĒVKRYFMRSVLRNYVPSPSORIRTONOREYRERILSAY
QPLHPELYTNDPSTFILPAFLQAINGNTEESITSIMMEPAPGVFAFPMLKPSFCQMLM
SEVNNFLRWAQSANQRIMRPTSLDRHGRGAALSDFGLQEMLDNLMKDFISPMSTVLFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hall, N., Berriman, M., Lennard, N.J., Harris, B.R., Gerrard, C.S., Atkin, R.J., Barron, A.J., Bart-Delabesee, E.N., Bowman, S., Bray-Allen, S.P., Bringaud, F., Clark, L.N., Corton, C.H., Cronin, A., Davies, R., Doggett, J., Fraser, A., Gruter, E., Hall, S., Harper, D.A., Hertz-Fowler, C., Kay, M.P., Leech, V., Mayes, R., Price, C., Quail, M.A., Rabbinowitsch, B., Rutherford, K., Sasse, J., Sharp, S., Shownkeen, R., Gull, K., Barrell, B.G. and Melville, S.E.
The sequence and analysis of the highly polymorphic chromosome I of the African trypanosome, Trypanosoma brucei
          /protein_id="BAB32903.1"
| Abx.xef="G1:13122422"
| Laislation="WEPERRATUR RRGOTHRVTAMPPPPOQAPEPAGLOLLLQPEV
| trainslation="WEPERRATUR RRGOTHRVTAMPPPPOQAPEPAGLOLLLQPEV
VAPNHPPPAPPAPAAVPAPPQPGEARYRRPLVRLQAVPNEDHVPDNYGDGPDELGIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INV 28-NOV-2002
                                                                                                                                                                          EVGGNTLDSHHTFVLEYGEADGARAIGNCAAHTIEDILVFCC"
complement(join(46556..46681,51622..51919,52095..52141,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (20-SEP-2002) The Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA, UK For more information about this sequence or the Trypanosoma brucei Project, see http://www.sanger.ac.uk/Projects/T_brucei. NOTE: This is the largest contiguous sequence from chromosome I, spanning between the 70 bp repeat arrays at either end. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Berriman, M., Hertz-Fowler, C.V.A., Hall, N., Kerhornou, A.X., Bowman, S., Quail, M., Kay, M.P., Bray-Allen, S., Lennard, N.J., Clark, L.N., Harris, B.R., Melville, S., Gerrard, C., Rajandream, M.A. and Barrell, B.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           size is 1056003 bp but it has been split into 4 database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TBBCHRIA2 - 197001 . . 197000
TBBCHRIA2 - 197001 . . 478000 (THIS ENTRY)
TBBCHRIA4 - 807001 . . 1056003
It replaces the previously submitted unfinished (941631 bp) sequence for T. brucei chromsome I. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Trypanosoma brucei
Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae;
                                                                                                                                                                                                                                              ch 48.5%; Score 25.2; DB 8; Length 141983; 1 Similarity 71.7%; Pred. No. 1.48+03; 33; Conservative 0; Mismatches 13; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                           7 TTCTCTCACGCTCTCATCGCTCTCGCCGGCCTCGCCAGTG 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281000 bp DNA linear
Trypanosoma brucei DNA chromosome 1, segment 2/4.
AL929604 AL359782 AL929608
AL929604.1 GI:25991392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism≈"Trypanosoma brucei"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="TREU927"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="Tb927.1.530"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:5691"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /chromosome="1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
2 (bases 1 to 281000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Trypanosoma brucei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ггураповоща.
                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    total
                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 35
TBBCHR1A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             join(33254. .34423,35296. .35505,35612. .35707,35804. .36025,
36599. .36793,36867. .37013,37093. .37242,37532. .37662,
37748. .37964)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="P0666G04.4"
join(33254. .34423,35296. .35505,35612. .35707,35804. .36025,
36599. .36793,36867. .37013,37093. .37242,37532. .37662,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               join(42951. .43385,43715. .43762,44108. .44284,44440. .44596,
44728. .44811,45332. .45387)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |oin(42951. .43385,43715. .43762,44108. .44284,4440. .44596,
|4728. .44811,45332. .45387)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NDEMKRGVDISNFRKEKLGSSSNGTIYWYDGDSTIGHRLYSEYYTLDFKRNLKGKNGR
LTKPVINIQWETVATNIDEFYBISEKLCSKGRERESAIGEHKYTEIIPDVEKLOKKKER
DLKROQKKDELLAYTSPGTRSLTERRPVSYNYSDVDRSIKEAIHVLECRKKER
ESDPQEAGKKERRASHQGNKGANGGSDIGPEQKEDGQEDAGGSDVNPEQDKDGQGDSV
ESDDLSSDBDEDBLYNYGKDDDSSGSDGENDVGSDGENDAYDPNKGTFEEEVFVPRK
RTRLASRRFDKPPQGLRRSRNMKNDEDVMRPGQLTPRSMTKKTMRQRPTSISKQFSL
GGSEDDREMIVADGEESGSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MASPAKRARPPASSPVDPPASPPAPEDPCVLLRRSWELASVLHF
LRVFEPVIEGNLGLSAEEIETALIANNHDLARIHIALIKGIPPTIKNLKVDDGWITAT
AKKLSDWWTWVAEGANPFKINPGKEIDTYKQQDPIKRLLILKALCEVRSEQNDAVWYV
                                                                                                                                                                                                                                                                                                                                 //gene="P0666G04.3"
complement(join(24484. .25102,25464. .25506,25942. .26053,
26232. .26321,26395. .26557,26679. .26785,26919. .27000,
27084. .27121,27204. .27290,28128. .28238,28380. .28517))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WLREKIQQQDALPKHANPVLLSSDLKKKAETVDRFCKPIMMKPKPAPKPQTPPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       similar to Arabidopsis thaliana chromosome 1 F14D16.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="hypothetical protein
similar to Arabidopsis thaliana chromosome 3 MRC8.21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ETPAGGAQTPEQQPQGAEAAGEASEGGASESTGEQMETDKPEGTEAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="P0666G04.4"
/notce="contains ESTs
D2201 (C10125), C26080(C11596), C26176(C11773),
AU085955(EC2104)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="hypothetical protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/protein_id="BAB32901.1"
/db_xref="GI:13122420"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="P0666G04.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="P0666G04.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37748.
                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
```

CDS

```
/trānslation="MLFVASSSKSHLINLDTKTVERSYVTTPVERRGLVYWPTARVVM
SWOSRGCASEDSPAMODPURCLTPOWTASASTSDGAFLLGVGTAEGULYWSTISGE
LLHUVRSHTRITELAISSDQSLIATAASEDSVCKTWLLAALVARGSAPAPRIYWGTSLGG
SLSVNACSFLDSSQSVVTASSDRSCRIFDGSTGQQFVVTLGDVLTSVRPSPGDEMLL
IGGETGSLFFVRLYSFSERGCLPTAGLTRVNAVYTCTPFTDGHKGA HYFIHPDYTRP
DYGUNGSTNGVILWMNIRTATVEKAVDDIAGGLLSVCYVPSDATOPSSAAVPPVVLO
KHPLDPLGVDFIVVSAGKKESAPISYQKEGGSRASRRKRKHQOTMEDTCVSMKRTENV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon start=1
/protein id="Conserved hypothetical protein"
/protein id="Conserved hypothetical protein"
/db xref="Conserved hypothetical protein"
/db xref="Conserved"
/translation="MDARVHRSKRGCGRVLKRSRASSPEVVAEVGTGRPGDPFVLPLR
SPROSGCHHPCEHSCDCLYVSKELERECYLSLQVSRQVTCKRSRELCKSVLPPFVAR
LLRVANYTADDFFYDLGCGRGSVLFHVALATGASCVGVEINEHNAKVAKEAWTHLRPV
PEKRRGRKLDVSIVCGDFCKVLKQDNYFSSSCVVWIANLLMRRFVNHYLSERLRSLPI
GSRVLCMEDLYPHSSVAARDPDAFEKFEMVDYRWQEDSVEWSPASGPFYLYIKRS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fprocein id="CAB95352.1"

/db_xref="G1:9366590"

/translation="WTHPYLMYIJVGGIVSFLTGCGVGMNDLANSFGTTYGSRVLNLW

/translaticn="WTHPYLMYIJVGGIVSFLTGCGVGMNDLANSFGTTYGSRVLNLW

/translaticn="WTHPYLMYIJVGGIVSFLTGCGIANPMTFANEPYVLMYGMCALSAFFIWLL

FATM%LPVSSTHS.TAGAIIGFALVYGGFGAVSFAKKIDEPPYVTGVAPIIASWFISP

MFAGAVAASLYALLRLVVLRPANSVNRALFALPLIVGVTFFLESFFVLFKGAKARLHW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GPAKASWVAALIGLGAASISAACIPLLRRRVRLITERAERERAETGMYTAPEISGDAG
AISBNAAGVGAAVEGPVDTANRIVPPSSEPTSDSPTAKENPANNASGLTTPGVVDEAL
FRVUJYPBRVEYVFRYLQVPTAACASPAHGANDSNAIAPPSAMYSI YI NYQOVVEEN
DVPLWILVLGGAGLVVGLATLGVGTMRLLGERITKI TPSRGFSAELSVALVVSLCSAF
GIPVSSTHCITGAVVAISIMDCGFRKVRWMNVGKMYLGWIFTLLITAAISALLFAQGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /trānslation="MNĀFGHLCDHQWRKSLRSVVLLFPIFSRQLILALSVPYGTVLII
FPPPSPFLFPFFLCFIIPLSCLCSFNLSVLMHTRTAFAPSAAWIPRTLWSHVARR
VALSGGVEGCEVTDVRECLKQNIMLEKVAGSSSSSR"
13700. .13709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Majority of genomic shotgun,TP7E4,TP3D18,;TPB12C6
and TPB15A20 reads call A, One genomic shotgun read calls
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Majority of WCS,TP3D18 and TP7E4;reads call C, Two WCS reads call T, type 1 (single nucleotide substitutions)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="Majority of genomic shotgun,TPB15A20,TP3D18,;and TP7E4 reads call A, Two TP20A12 reads call C type 1 (single nucleotide substitutions)" complement(13430. .13846) /gene="TP227.1.590" complement(13430. .13846)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Majority of WCS,TP3D18,TP7E4,TP3D18 and;TPB12C6 reads call G, One WCS read calls A type 1 (single nucleotide substitutions)" complement(8396. .9223)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/product."phosphate-repressible phosphate permease,
possible"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VATELEEGARESTGKPTSAERFSRLREKNDELEFLKNKLKEKLRKLRAAS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lype 1 (single nucleotide substitutions)"
7896
/codon_start=1
/product="conserved hypothetical protein"
/protein_id="CAB95350.1"
/db_xref="G1:9366588"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/producis="hypochetical protein"
/protein_id="CAD53050.1"
/db_xref="GI:25991393"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (10259. .11809)
/gene="Tb927.1.580"
complement (10259. .11809)
/gene="Tb927.1.580"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Tb927.1.570"
complement(8396..9223)
/gene="Tb927.1.570"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YAPSLTSO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (591.) 5283)

complement (591.) 52883)

/ gene="Tb927.1.550"

/ note="unlikely gene"

/ codon start=1

/ product="hypothetical protein, unlikely"

/ product="hypothetical protein, unlikely"

/ product="hypothetical protein, unlikely"

/ product="hypothetical protein, unlikely"

/ product="nypothetical protein, unlikel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="DNA-directed RNA polymerase III, probable"
/protein_id="CAB95348.1"
/db_xref="G1:9366586"
/translation="WTPRACCDEGYATRKLALLPALINMKGLLNHHVASFDHLINVE
LGRILLNESNREIKSSIDPDF9IRYSGIRVCRRREIVGKGGLPKPVSPHECRRDLTY
RGDIVVDVEYTSRDRSKRICTETNIKIGTIPIMLKSSSCNLYGKGREELIAMRECPLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PGGYF11KGVEKVCLVQEQQSKNRV11EADDNGD1VAHVQSKTHYSISKCSVTFRKGR
TVWTHSKFRACIDFALOMESDOO1AQHTGVSPRACSULACFFRAGINKTQ
DDALHFIGERRKETPREMDETQQRHVQKSKADSAAEFLANVLLCH TREGEVQBWNFR
HKALYVCFWVRRWTEASVDSSLLDERDFYGNKRFETTGTLMGLLFEDLLKQYNRVWT
AMDQLLSKROTTKPFNLKQANSYLOGNRKPETTGTLMGLLFEDLLKQYNRVWT
RLSY1SCIGMATRASSFEKSKISGPRSLQPSQWGWVCPCTTPEGESCGLVKNFAIL
SQVTLDMDDSFVRAAAYNLGVEEVDCISPNEFLKYTTVFLMGILMGIHRYPSRLCRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RTLRRSGRLHPHYSTAINDROKSVQIGCDGGRIVRLIYVRDGKPATTSGRIDGRIVANGER CENTRRSGRLHPHYSTAINDROKSVQIGCDGGRIVRLIYVRDGKPATTSGRIDGRIVANGER PROSTAINDROKSVGIIPPP HHNOSGAUGTIAVYPKDIBOYTTHLEIEPLSLLGVVAGIIPPP HHNOSGAUGALGTIAVYRDKIBOYTCHAIEPPLSLLGVVAGIIPPP HHNOSGAUGARGATAVARTOVARGAUGANGTIATAVOYIRMCIANTVLLACAYPORPLCRTKAMNLTNYEIL GAGINAMYCWASYGYOIDEDAQYYRRSSLDGRYGCRGCVARKHEVELERLPNGEYDIIL HVUS SPROBEDBORSONDVEOKTAVYRYPPPSMFRRYNTYRYPPPSMFRYNGYLLEUVSSKVSALTGKFGDGTAFGGDRAEDLGEELI RHGYNYHGKDIFYSGVTGEMLRAVVFFGPIYVGKLLEUVSSKVSALTGKFGDGTAFGGDRAEDLGEELI RHGYNYHGKDIFYSGVTGEMLRAVVFFGPIYVGKLLEUVSSKVSALTGKFGDGTAFGGDRAEDLGEELI RHGXNYHGKDIFYSGVTGEMLRAVVFFGPIYVGKLHNYTDKMHARATGPRSMLTRQPIYGRSRSGGLRVGEMBRDCMVGYGASNLLNERLLVSSDLFTIDICRCCGFMGYNGYCS YCNAKNTVSRVNVPYAFKLLLQELQGMGISTRLSLDFMGSQ"
                                                                                                                                                                                                             RSFPODGFPLKLFSTLAETPENRIVAAVPCTTVWTVDDVHDDDVEGLWPPLOSCOEAC
SSPHVSKHFDLLYLSLYFAIQACRTTSTSSWSHWQRQLSPPATFKSDVEDAAATFLQI
LSENSIVPPMELMLNMCRYTQTHSCRLTKDRMKLNLKEGPVLAVMPLVDLMISQNVAE
                                                                               protein id="CAB95347.1"
/db_xref="G1:9366588"
/trānslation="MRSRYMRKGNESVTVAVSSFTREDAFFLSCMRSLGIGVAPYLRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Majority of WCS,TPB15A20,TP3D18 and TPB12C6;reads call A, Three TP20A12 reads call G
type 1 (single nucleotide substitutions)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Majority of WCS,TPB15A20,TPB12C6;and TP3D18 reads call A, One WCS read calls C
type 1 (single nucleotide substitutions)"
complement(5981. .688)
/gene="Tb927.1.550"
                                                                                                                                                                                                                                                                                                                                                     GNVALRRCDARQLRSLMRSNPLKCAKQHLSVCDDDAAYWLLETVVAVKEYIPLNL"
2218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Majority of WCS,TPB15A20,TPB12C6,TP3D18,and TP7E4 reads call C, One WCS read calls T
type 1 (single nucleotide substitutions)"
3734
                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Majority of WCS,TP3D18,TP7E4 and TP815A20,reads call T, Two TP20A12 reads call C, One WCS read calls C type 1 (single nucleotide substitutions)"
                                              'product="hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="Tb927.1.560"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                        variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
```

CDS

RESULT 36 PSU96179

ACCESSION VERSION KEYWORDS SOURCE

Matches

ઠે

REFERENCE AUTHORS TITLE

JOURNAL MEDLINE PUBMED

REFERENCE AUTHORS TITLE JOURNAL

FEATURES

BASE COUNT ORIGIN

ò

gene

```
AF232003 Stringae pv. syringae strain 61 tRNA-Leu gene, complete sequence; putative type III chaperone and type III effector protein (hrmA) genes, complete cds; and HrpK (hrpK) gene, partial cds.
                                                                                                                                                                                                                                                                               Pseudomonas syringae pv. syringae
Pseudomonas syringae pv. syringae
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.

1 (bases 1 to 2898)
Alfano, J.R., Klm, H.S., Delaney, T.P. and Collmer, A.
Evidence that the Pseudomonas syringae pv. syringae hrp-linked hrmA
gene encodes an Avr-like protein that acts in an hrp-dependent
manner within tobacco cells
MOL. Plant Microbe Interact. 10 (5), 580-588 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /trānslation="mempalafdDKGACNMIIDKAFALTLLRDDDTHQRLLLIGLLEP
HEDLPLQRLLAGALNPLVNAGPGIGWDEQSGLYHAYQSIPREKVSVEMLKLEIAGLVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /trānslation="mnPIHARFSSVEALRHSNVDIQAIKSEGQLEVNGKRYEIRAAAD
SAIVURBODQSKADKFFKARAHLIGGQSQRAQIAQVLNEKAAAVPRLDRHGRRFDL
EKGGSSANGAAIKADSRLTSKQTFASFQQMAEKABALGRYRNRYLHDLQEGHARHNA
YECGRVKNITWKRYRLSITRKTLSYAPQIHDDREEEBLDLGRYIAEDRNARTGFFRNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A Laach, J. N. (Darkowski, A.O., Deng, W.L., Badel, J.L.,
Petnicki-Ocwieja, T., van Dijk, K. and Collmer, A.
Petnicki-Ocwieja, T., van Dijk, K. and Collmer, A.
He Pseudomonas syringae Hrp pathogenicity island has a tripartite
mosaic structure composed of a cluster of type III secretion genes
bounded by exchangeable effector and conserved effector loci that
contribute to parasitic fitness and pathogenicity in plants
Proc. Natl. Acad. Sci. U.S.A. 97 (9), 4856-4861 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biol. Sci., UNLV, 1854 Maryland
USA
       464 CTGTTGGCTGCGCTCTCAACCCCCTTGTGAATGCCGGCCCCGGCATTG 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    syringae pv. syringae"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="ORF1"
/codon start=1
/transl_table=1
/product="putative type III chaperone"
/protein_id="AAF71480.1"
/db_xref="GI:8037768"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="type III effector protein"
/protein id="AAF71481.1"
/db_xref="G1:8037769"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="pathovar: syringae"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Pseudomonas F
/mol_type="genomic DNA"
/strain="61"
/db_xref="taxon:321"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="synonym: hopPsyA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 (bases 1 to 2898)
Alfano, J.R. and Collmer, A.
Direct Submission
Submitted (07-FEB-2000) Dept. Bi
Parkway, Las Vegas, NV 89154, UG
Location/Qualifiers
e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1106. 2233
/gene="hrmA"
/note="HopPsyA (HrmA)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                256. .340
/product="tRNA-Leu"
708. .1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                                                                                         AF232003.1 GI:8037767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1106. .2233
/gene="hrmA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 2898)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WMKCWREART"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97348579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10781092
                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LRNA
                                                                          RESULT 37
                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                  AF232003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas syringae pv. syringae
Pseudomonas syringae pv. syringae
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
1 (bases 1 to 723)
Alfano,J.R., Klm,H.S., Delaney,T.P. and Collmer,A.
Evidence that the Pseudomonas syringae pv. syringae hrp-linked hrmA
gene encodes an Avr-like protein that acts in an hrp-dependent
manner within tobacco cells
Mol. Plant Microbe Interact. 10 (5), 580-588 (1997)
                                                                                                                                                                                                                                                                                           723 bp DNA linear BCT 06-NOV-2001
Pseudomonas syringae pv. syringae HrmA (hrmA) gene, partial cds;
and unknown gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /protein id="AABS8695.1"
/db_xref="GI:2149940"
/translation="MIIDKAFALTLIRDDTHQRLLLIGLLEPHEDLPLQRLLAGALNP
LVNAGPGIGWDEQSGLYHAYQSIPREKVSVEMLKLEIAGLVEWMKCWREART"
                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
/note="Majority of WCS,TP3D18,TP7E4,TPB15A20 and,TP16A7 reads call 10 G, One WCS and TP20A12 read call 12G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 (bases 1 to 723)
Alfano, Jr. and Collmer, A.
Direct Submission
Submitted (02-APR-1997) Plant Pathology, Cornell University, 334
Plant Science Bldg., Ithaca, NY 14853, USA
Location/Qualifiers
1. 723
Corganism="Pseudomonas syringae pv. syringae"
/mol type="genomic DNA"
                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                        Length 281000;
                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                    64495 CATTICTCTCTCGCTCTCATCACCGTCATCCTCGTCCTCGTCA 64540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 CAGTTCTCTCACGCTCTCATCGCTCGTCGTCGCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
48.1%; Score 25; DB 1; Length 723;
Best Local Similarity 69.4%; Pred. No. 2.4e+03;
Matches 34; Conservative 0; Mismatches 15; Indels
                                                                Score 25.2; DB 3; Length 2
Pred. No. 1.3e+03;
0; Mismatches 13; Indels
                                                                                                                                                       4 CAGTTCTCTCACGCTCTCATCGCTCTCGTCGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:321"
/note="pathovar: syringae"
356. .646
/note="ORF1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon start=1
/transI_table=11
/product="HrmA"
/protein_id="AAB58696.1"
/db_xref="GI:2149941"
/translation="MNPIHA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              706. .>723
/gene="hrmA"
/note="Avr-like protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        178 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/transl_table=11
/product="unknown"
                                                                   ch 48.5%;
l Similarity 71.7%;
33; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  706. .>723
/gene="hrmA"
                                                                                                                                                                                                                                                                                                                                                                                                                   U96179.1 GI:2149939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202 c
                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9204563
                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
```

```
/processin_id="AAAAS3134.1"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:30231123"
/db_xref="G1:3023123"
/db_xref="G1:30231123"
/db_xref="G1:30231
                                                                                                                   GSIAVLRPDQOSKADKFFKGAAHLIGGOSQRAQIAQVLNEKAAAVPRLDRMLGRRFDL
EKGGSSAVGAAIKAADSRLTSKQTFASFQQWAEKAEALGRDTEIGIYWIYKRDTPDTT
PWNAARDERYLETLQALDWKKNALIIROGIHDDREFEELDLGRYIAEDRNARTGFFRWV
PKDQRAPETNSGRLIIQVEPKYGAQIALAMATLMDKHKSVTQGKVVGPAKYGQDTDSA
ILYINOBAAKAVKLGEKLKKLGGIPPEGFVEHTPLSMOSTGLGLSYAESVEGQPSSHG
QARTHVIMDALKGQGPMENRLKMALAERGYDPENPALRARN"
                                                                                             /translation="MNPIHARFSSVEALRHSNVDIQAIKSEGQLEVNGKRYEIRAAAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MPSNRINFPALLNEPDHARRRLYLRTPRFPDCSPPAGRASQQSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BCT 11-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X98916.1 GI:1781024
Deta-subunit; fwCB gene; tungsten formylmethanofuran dehydrogenase.
Methanopyrus kandleri
Methanopyrus kandleri
Archaea; Euryarchaeota; Methanopyrus is Euryarchaeota; Methanopyrus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A selenium-dependent and a selenium-independent formylmethanofuran dehydrogenase and their transcriptional regulation in the hyperthermophilic Methanopyrus kandleri Mol. Microbiol. 23 (5), 1033-1042 (1997) 97231344
                                                                                                                                                                                                                                                                                                     complement(2079. .2369)
/note="similar to Pseudomonas syringae pv. syringae 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vorholt,J.A.
Direct Submission
Submitted (28-JUN-1996) J.A. Vorholt, Max-Planck-Institut f.
terrestrische Mikrobiologie, Karl-von-Frisch-Strasse, D- 35043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="truncated; interrupted by insertion of gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2261 CTGTTGGCTGCGTCTCAACCCCCTTGTGAATGCCGGCCCCGGCATTG 2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ch 48.1%; Score 25; DB 1; Length 3076; 1 Similarity 69.4%; Pred. No. 2.2e+03; 34; Conservative 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 CAGITCICICACGCICICATCGCICICGTCGCTGCCGGCCTCGCCAGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vorholt, J.A., Vaupel, M. and Thauer, R.K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/transl_table=11
/product="putative_chaperone"
product="putative effector"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         798 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2936. .3076
/gene="queA"
/codon start=1
/transl_table=11
/product=="queA"
/brotein_id="AAP23135.1"
/db_xref="GI:AAP23135.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3719 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Methanopyraceae; Methanopyrus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            829 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2936. .>3076
/gene="queA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           M.kandleri fwcB gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         798 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cluster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MKFWCB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X98916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 39
MKFWCB/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3076 bp DNA linear BCT 30-APR-2003
Pseudomonas syringae pv. syringae exchangeable effector locus,
AP461561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonas syringae pv. syringae
Pseudomonas syringae pv. syringae
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadaceae;
1 (bases 1 to 3076)
1 (bases 1 to 3076)
Pseudomonas syringae Exchangeable Effector Loci: Sequence Diversity in Representative Pathovars and Virulence Function in P. syringae pv. syringae B728a
13. Bacteriol. 185 (8), 2592-2602 (2003)
   PKDQRAPETNSGRLTIGVEPKYGAQLALAMATLMDKHKSVTQGKVVGPAKYGQQTDSA
11Y1NGDLAKAVKLGEKLKKLSGIPPEGFVEHTPLSMQSTGLGLSYAESVEGQPSSHG
QARTHVIMDALKGQGPMENRLKMALAERGYDPENPALRARN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein id="AAP23132.1"
/db_xref="G1:30231121"
/translation="MGREASAGLGRLGGQMIGRAVGLVAGEATGLAAGAALGAAIPVI
dAAIDGAMALGFGISAIIDAVKKHKAQKAFDHNVDPVLDQFGIDRAH"
complement(892. 2019)
/note="Orf2; similar to Pseudomonas syringae pv. syringae
61 HopPsyA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12670984
2 (bases 1 to 3076)
2 (bases 1 to 3076)
Deng,W.L., Rehm,A.H., Charkowski,A.O. and Collmer,A.
Direct Submission
Submitted (21-DEC-2001) Plant Pathology, Cornell University, Plant
Science Building Rm 334, Ithaca, NY 14853, USA
Location/Qualifiers
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Pseudomonas syringae pv. syringae"
/mol_type="genomic DNA"
/strain="226"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match 48.1%; Score 25; DB 1; Length 289
Best Local Similarity 69.4%; Pred. No. 2.2e+03;
Matches 34; Conservative 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                               /procein_id="AAF71482.1"
/db_xref="GT:8037770"
/translation="NUDPVLDQFGIDRAH"
759 c 749 9 622 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:321"
/note="pathovar: syringae"
                                                                                    complement (2849. .>2898)
/gene="hrpk"
complement (2849. .>2898)
/gene="hrpk"
/codon start=3
/transI_table=11
/product="Hrpk"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon start=1
transl table=11
product="HrpK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF461561.1 GI:30231120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <1. .276
/gene="hrpK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="hrpK"
                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF461561/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
```

ઠે g ö

49

01-AUG-2002

```
complement (82. .837)
/gene="MK0260"
/codon start=1
/transl_table=11
/transl_table=11
/product="Activator of 2-hydroxyglutaryl-CoA dehydratase,
contains a HSPT0-class ATPase domain"
/protein_id="AAM01477.1"
/db_xref="G1:19886588"
/translation="MRVLGVDAGSSHLKCAIVEDGSLEDHTVVESTGPVKKVLRRALD
ELGAGIDEPUYATGYGREALSDEFDETVPELPAVALGASQLVEGARTVIDVGGODT
KVMKVVEDGKVVDFQVNDKCAAGTGRFVENVCRLGIEMSEVDEHASGADDPVKINSMC
AVFRATEVISLVNRGIDVBRAILGGVLDSVAERVATMIDKVSPEPEVVLVGGMARCRVF
AELLSDRLEMGINVPNEAHVAGAFGAALMVLEK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /procedin_id="AAM01478.1"
/db_xrefe="G1:19886589"
/db_xrefe="d1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="G1:19886589"
/db_xrefe="d1:19886589"
/db_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Methanopyrus kandleri AV19
Methanopyrus kandleri AV19
Methanopyrus kandleri AV19
Methanopyraceae; Bethanopyrus, Methanopyrales;
Methanopyraceae; Methanopyrus.

1 (bases 1 to 10264)
Slesarev,A.I., Mezhevaya,K.V., Makarova,K.S., Polushin,N.N.,
Shoferbinina,O.V., Shakhova,V.V., Belova,G.I., Aravind,L.,
Natale,D.A., Roopzin,I.B., Tatusov,R.L., Wolf,Y.I., Stetter,K.O.,
Malykh,A.G., Koonin,E.V. and Kozyavkin,S.A.
The Complete Genome of the Hyperthermophile Methanopyrus kandleri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished

2 (bases 1 to 10264)

2 Slesarev,A.I., Mezhevaya,K.V., Makarova,K.S., Polushin,N.N.,

Shcherbinina,O.V., Shakhova,V.V., Belova,G.I., Aravind,L.,

Natale,D.A., Rogozin,L.B., Tatusov,R.L., Wolf,Y.I., Stetter,K.O.,

Malykh,A.G., Koonin,E.V. and Kozyavkin,S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="Uncharacterized membrane protein, conserved in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (04-FEB-2002) Fidelity Systems, Inc., Gaithersburg, MD 20879
                                                                                                                                                                                                                                                                                                                                            AE010324 10264 bp DNA linear BCT 01-Al
Methanopyrus kandleri AV19 section 23 of 157 of the complete
                                                                                       418 AGGAAGCTCGGGCACGGTCTCATCGAACTCGTCGCTCAGAGCCTCCCTA 370
                                                    1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Methanopyrus kandleri AV19"
/mol_type="genomic DNA"
/strain="AV19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:190192"
complement(82..837)
/gene="MK0260"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1028. .1489
/gene="MK0261"
1028. .1489
/gene="MK0261"
/codon start=1
/trans1_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1504 . .1977
| /gene="MK0262"
| 1504 . .1977
| /gene="MK0262"
| /codon_8tart=1
                                                                                                                                                                                                                                                                                                                                                                                                                               genome.
AE010324 AE009439
AE010324.1 GI:19886587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .10264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      archaea"
                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                         RESULT 40
AE010324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                             g
                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | gene="orf?" |
| codon start=1 |
| transl_table=11 |
| procein_id="CA67411.1" |
| procein_id="CA67411.1" |
| procein_id="CA67411.1" |
| db_xref="SPTREMBL:P94942" |
| db_xref="SPTREMBL:P94942" |
| canslation="MOINTENKELGIDLERHDELLEALPEUYERIFLSOENRPERMSY |
| translation="MOINTENKELGIDLERHDELLEALPEUYERIFLSOENRPERMSY |
| prevvadingarverery |
| prevvadingarverery |
| translation="MOINTENKELGIDLERHDELLEALPEUYERICGGAEFPIP |
| DAFWLDPAPISARVEREY |
| translation="MOINTENKER |
| tra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cranslation="MRVLGVDAGSSHLKCAIVEDGSLEDHTVVESTGPVKKVLRRALD 
ELGAGIDEFDYTAVTGYGREALSDEFDETVPELPAVALGASQLVEGARTVIDVGGQDT 
KVMKVEDGKVVDFQVNDKCAAGTGRFVENVCRRLGIENSEVDEHASGADDPVKINSMC 
AVBATFEVISLVNRGIDVERILLGVLDSVAERVATMIDKVSPEPEVVLVGGMARCRVF 
AELLSDRLEMGINVPNEAHVAGAFGAALMVLEK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="CAA67410.1"
/db_xref="G1:1781026"
/db_xref="G1:1781026"
/tanslation="MGRYKDVVCPFCGTLCDDLEVVVEDGEIVEVRHACRIGAAKF
/translation="MGRYKDVVCPFCGTLCDDLEVVVEDGEIVEVRHACRIGAAKF
LTAQEDHRHTEPMIRKBNGEWKKIDYEDAAESTARILVEAKWPLMYGWSTLCEAHEVG
IEIAEKVGAVIDNTASVCHGPSTLGLODAGVPSCTLGEVKNRADVIIWGCNPWHAHP
RHMSRYTAFTRGFFRRKGREDRTIIVVDPRRTATAELADVHLQVRPNEDYELISALRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVHGIEIEREVÄGIPVEAVHEVADLIKEASFOTLEMENGITYSIKERINIDELLALAR
RDLABEYAKATLIMMRGHYNYTGENEVLTWATGEPFAVDESRGYPRYNPGEFSAVDVLI
RGEVDAAFVIASDFGAHFPRKAVEHMAMIPLVCVDPHWTPTABIADLYVPVTIAGIEW
EGTAYRMDSVPIRMRKVVEPPESMLNDVEFLEMVIEKVEEMV"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                         Direct Submission
Submitted (15-JAN-1997) J.A. Vorholt, Max-Planck-Institut f.
Submitted (15-JAN-1997) J.A. Vorholt, Max-Planck-Institut f.
terrestrische Mikrobiologie, Karl-von-Frisch-Strasse, D- 35043
Marburg, FRG
On Jan 16, 1997 this sequence version replaced gi:1419620.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     formylmethanofuran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48.1%; Score 25; DB 1; Length 3719; 69.4%; Pred. No. 2.1e+03; ive 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                         1. .3719
/ organism="Methanopyrus kandleri"
/ mol type="genomic DNA"
/ strain="Av19/DSM 6324"
/ db_xref="taxon:2320"
/ clone_lib="lambda ZAP"
/ 185. .940
/ gene="orf6"
/ codon_start=1
/ transl_table=11
/ protein_id="CAA67409.1"
/ db_xref="G1:1781025"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon start=1
/transT table=11
/product="beta-subunit of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="fwcB"
1043. .2347
/gene="fwcB"
/EC_number="1.2.99.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="orf7"
complement(2355. .3620)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1060 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dehydrogenase"
Marburg, FRG
Revised by [3]
3 (bases 1 to 3719)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                      Vorholt, J.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 34; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                       REMARK
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                               COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
```

gene

SOS

CDS

```
Cranslation=MKALEQLSSYVAENRAGNRWDFKLAGIRVGRGRTVTFFRHILLA
SLACLTLDIAATCVNEEFESKVESIIQNPPPGGTKEITLYASGSYVMTGRIKVSYRGP
BEVBEVDKLINGLKELREDLDPLAGONDEIKCLIAGALKKFODTSOVLEKLKEKTOG
LLCALAACELDVDLAWYVGETGTPPSDLPOILQQURTEGELHLSYKIPYPEAHYYVVGSVE
LLDRALNLPIRAVFSYDYPNDGSGVKVSVDTEHRKFTIETTDNIYNLIVVELTLHGGL
QEVEKLADLSVESSEDLQKLLENTEVKVECYPRGGRTAEINGLPLMYDEGAAIVYYAV
GSNPINSIVASKIAELMGROPLVYTGNADLQVGTDGKTLVIKGSAPGGLVVIYGPA
PONTLDVTSRVGTLQVARALGAQVPPLVSLFCWILGGSLGSTITTTYTPAFSGGLRNSP
RGIGMATPAVIAALLLGVAGRRSKK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /protein_id="AaM01485.1"
/db_xref="GI:19886596"
/translat_ion="MGEWKPKIJAPCCNWCSYGGADTAGVGRMQYPPSTRIIRVMCSG
/translat_ion="MGEWKPKIJAPCCNWCSYGGADTAGVGRMQYPPSTRIIRVMCSG
RTEPSLULKAFREGADGVEVGGCHLGDCHYQSGNYRWMRRAELLKKFLAEIGIEPERF
RYEWISASEGEKFAEVMTEFHQTLLELGPLELRERLKRL"
                       YHYARTIELLSSAERCVELLEDDEITGDDVREEVDPDDVTGGGIGCVEAPRGTLIHHF
KTDEEGLITEVNLIVATVQNNPAMDLGVKKVAEEYLRSPEDASPEVLNRMEMVIRAYD
PCLSCATHVLGERPRLTLEVHRAGRLVRIVEG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MILKFDHWSGPLYLHCSIRRGDPRRIIERSSTGVIIQAISTEYA
DYRVIASAACRAIRAFESDRNLARSLDLEFLVRLTGTRQIREAIDRAEPGDEFVLVVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
/product="Coenzyme F420-reducing hydrogenase, delta
subunit"
                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="Coenzyme F420-reducing hydrogenase, gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transT_table=11
/product="Uncharacterized conserved protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      604 AGGAAGCTCGGGCACGGTCTCATCGAACTCGTCGTCAGAGCCTCCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGCAGTTCTCTCACGCTCTCATCGCTCGTCGCTGCCGGCCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48.1%; Score 25; DB 1; Length 102
69.4%; Pred. No. 1.9e+03;
ive 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/transl_table=11
/product="Predicted_membrane_protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="AAM01486.1"
/db_xref="GI:19886597"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /protein_id="AAM01487.1"
/db_xref="G1:19886598"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (9674. .10114)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (9674. .10114)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Search completed: November 13, 2003, 08:17:42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="flpD_1"
/note="synonym: MK0268"
complement(7720..8145)
                                                                                                                                                                                                                 /gene="MK0267"
complement(6809. .7723)
                                                                                                                                                             complement (6809. .7723)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (7720. .8145)
                                                                                                                                                                                                                                                                                                                                                                                        table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="flpD]"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8285. .9712
/gene="MK0269"
8285. .9712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="MK0270"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                 /codon_start=1/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="MK0269"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="MK0270"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       34; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       subunit"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / POTOTE IN CONTROL AND A STANDARD A STANDAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon state=1
/transl_table=11
/transl_table=11
/product="uncharacterized protein conserved in archaea"
/protein_id="AAAV01400.1"
/db_xref="d1:19886591"
/db_xref="d1:19886591"
/translation="MEMCLISPLESARDEGPSDEREGKGLIVFESARDAMKAERTL
KEAGYDVRAVAPPPEIREGCDLAIEYDLVDEVGVRRTLEEIGVEPLKFVSLEDPSLKP
IELVRWKEVDGYINKYCGNMKVTVDROGTIVNVSGGGCPDVPYLAHELVGKNVLELSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon start=1
/transLtable=11
/product=*Predicted sugar kinase"
/product=*Predicted sugar kinase"
/product=*Predicted sugar kinase"
/protein_id="AAM01481.1"
/protein_id="AAM01481.1"
/protein_id="C1:19886592"
/translation="MAAAAARULEFGEDEPRLITAGDLGEGDGSLEIYRRLREVDDD VLVIHYIRPKIDEIRRVDTSGKVIADAGGMYAAKAAGIGPEFHLFLPDPGELAFLADE PLVHTHYRRETAEVOREPTAEVDEPUTGIVAALIAAGFGTEEACVIGCRVNTRLGEIANATPTTRIHE
LTRAIPBALCEELRE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / DECOURTED TO THE TOTAL THE TO
                                                                                                                                                                                                   /trānslation="MAEYLHAIGTLAFGVLIGYLGQRSAMCFIGGIRDVYLLRDTWLV
QGLIGFLIGAFFGLVVFGAAGMIKKFPWFLYKGASAIPGDVLGKKPGFAAHAAVTVIG
GLGVGFLSVVQGGCPFRNYVWAAEGNVTAMAYLLGVFVGAVFFHACIVPIFGPPK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /transT_table=11
/product="Coenzyme F420-reducing hydrogenase, alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon start=1
/transI table=11
/product="Heterodisulfide reductase, subunit
polyferredoxin"
/transl_table=11
/product="Predicted transporter component"
/protein_id="AAM01479.1"
/db_xrefe="GI:19886590"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="hdrA_2"
/note="synonym: MK0265"
complement(3387. .5357)
/gene="hdrA_2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (3387, .5357)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (5364. .6812)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (5364. .6812)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="MK0264"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2680. .3381
/gene="MK0264"
                                                                                                                                                                                                                                                                                                                                             1982. .2560
/gene="MK0263"
                                                                                                                                                                                                                                                                                                                                                                                                                              1982. .2560
/gene="MK0263"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="MK0266"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="MK0266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="hdrA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .3381
```

CDS

ö

gene

CDS

Job time : 1954 secs